1995

Towboat on the Ohio

James E. Casto

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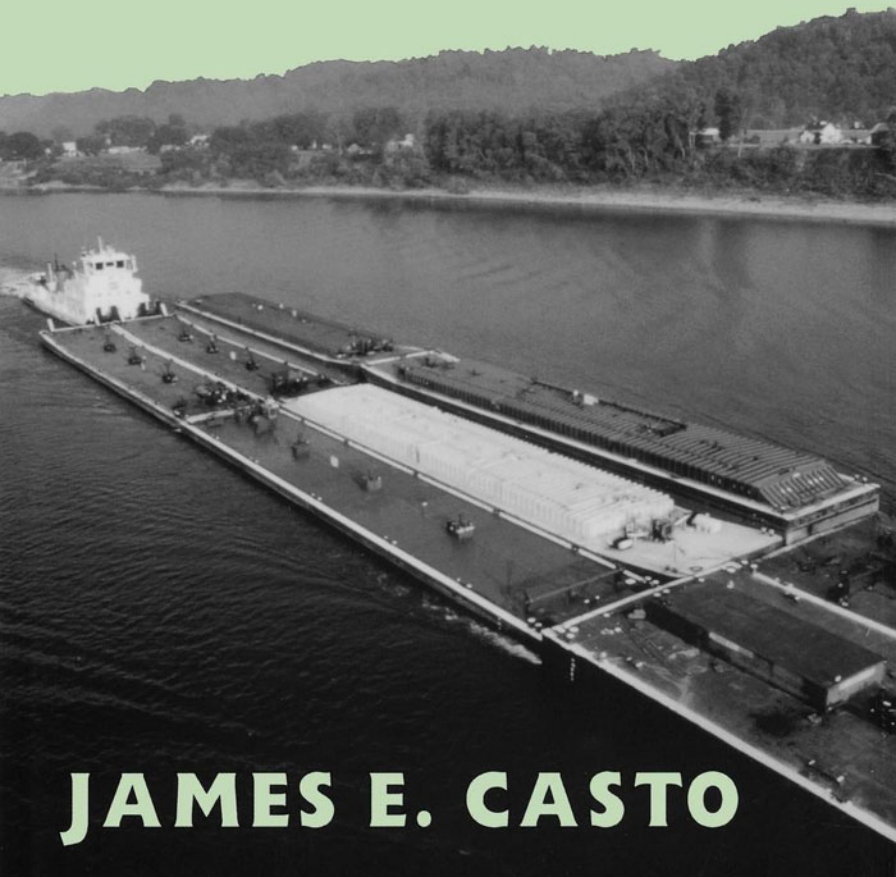

JAMES E. CASTO

The Ohio River Valley Series

Rita Kohn & William Lynwood Montell
Series Editors

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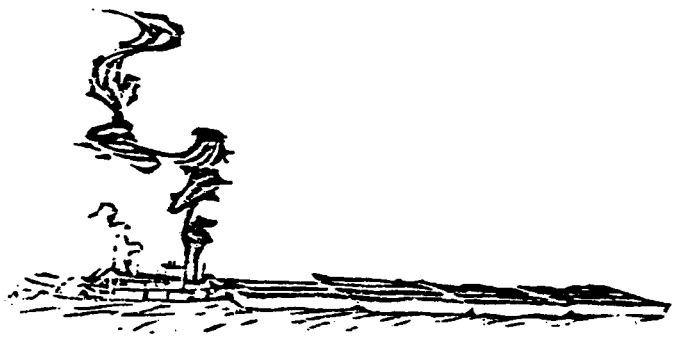


THE UNIVERSITY PRESS OF KENTUCKY

Editorial and Sales Offices: The University Press of Kentucky
663 South Limestone Street, Lexington, Kentucky 40508-4008
www.kentuckypress.com

The towboat woodcut that appears throughout the book is by
Harlan Hubbard and is used by permission of Bill Caddell.

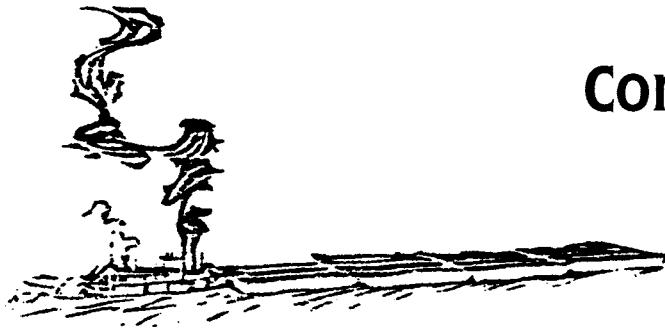
The Library of Congress has cataloged the hardcover edition as follows:

Casto, James E.
Towboat on the Ohio / James E. Casto.
p. cm.—(Ohio River Valley series)
Includes bibliographical references and index.
ISBN 0-8131-1916-2 (alk. paper)
1. Ohio River Valley—Commerce—History. 2. Ohio River
Valley—Description and travel. 3. Towboats—Ohio River Valley.
I. Title. II. Series.
HF3155.C37 1995 94-41605
387.2'32'0977—dc20
ISBN 13- 978-0-8131-2970-9 (pbk. : alk. paper)

This book is printed on acid-free recycled paper meeting
the requirements of the American National Standard
for Permanence in Paper for Printed Library Materials.

Manufactured in the United States of America.

Member of the Association of
American University Presses



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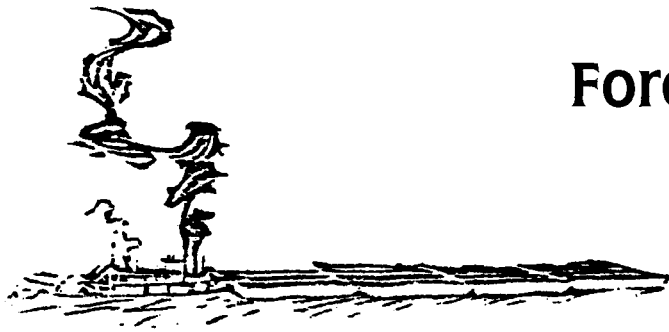


Foreword

The impact of the Ohio River in the context of the larger American story gained widespread public attention in 1991 as a result of "Always a River: The Ohio River and the American Experience," a project sponsored by the National Endowment for the Humanities and the humanities councils of Illinois, Indiana, Kentucky, Ohio, Pennsylvania, and West Virginia, and a mix of private and public organizations. The project continues as a series of ongoing study groups, conferences, and other events.

The Ohio River Valley Series, conceived and published by the University Press of Kentucky, extends the work of "Always a River" through the publication of books that examine and illuminate the waterway, the land in its watershed, and the waves of people who made this fertile and desirable area their place of residence, of refuge, of commerce and industry, of cultural development, and ultimately of engagement with American democracy.

Each book in the series contributes to a wider understanding of Ohio River Valley history and folklife and aids our understanding of the implications of change brought about through natural and human interrelationships with the river. Each story is told through people interacting within their particular place and time. Each reveals why records, papers, and oral stories preserved by families and institutions offer rich resources for examining the history of the Ohio River Valley and of the nation. Each traces the impact of the river and its tributaries on individuals and cultures and, conversely, how these individuals and cultures have affected the valley as we know it.

In the process of being a river, the Ohio, together with its tributaries, has touched those of us living within its region individually and collectively. This series celebrates the story of a valley through multiple voices and visions.

Towboat on the Ohio synthesizes the story of the Ohio River and its tributaries as a commercial route in the modern towboat era. Written as a firsthand account of a working trip, this book continues the tradition

of eighteenth- and nineteenth-century eyewitness accounts. Historic references are interlaced with the current concerns of labor, business and industry, and governmental operations. The reader experiences the minute-by-minute drama and drudgery of operating a towboat. Here is an engaging treatment of the history of a river that has played and continues to play a significant role in the economic life of our country.

Rita Kohn
William Lynwood Montell
Series Editors

Acknowledgments

Although my name is on the title page of this book, no volume such as this is written singlehandedly. It's the result of contributions, large and small, by many individuals and organizations, and I greatly appreciate their encouragement and assistance.

First, I must acknowledge Rita Kohn of the Indiana Humanities Council. Although the original idea for this book was mine, it was Rita who gave that idea shape and form and laid out the path to its publication. Rita's enthusiasm and her energy are contagious. All reluctant authors should have someone like her urging them on.

There is no praise lavish enough for the good folks in the Public Affairs office of the Huntington District of the U.S. Army Corps of Engineers for their many kindnesses and courtesies in response to my repeated pleas for assistance. My thanks go to Steve Wright, Kathy Gibbs, Conrad Ripley, and their colleagues. Valuable assistance also was rendered me by Corps of Engineers staffers at its Pittsburgh District office and its Ohio River Division office in Cincinnati.

Special thanks are due two of my friends and fellow river fans who consistently encouraged me during the research and writing of this book. I have a nagging suspicion that either Jim Ross, my coworker at *The Herald-Dispatch*, or Jerry Sutphin, a freelance artist and designer, might have done a better job on this assignment than I did. But, to my good fortune, fate conspired to send the task my way. Along with many others, Jim and Jerry gave me much advice and assistance. Jerry was especially helpful in aiding me with the glossary. This book is better for their help. Of course, the fault for any errors is solely mine.

My thanks go also to Barry Palmer and Susan Loedding of the Association for the Development of Inland Navigation in America's Ohio Valley (DINAMO), Katherine Kirkpatrick of the National Coal Association, Jeffrey A. Smith and Tia Fisk of the American Waterways Operators, J. Jeffrey Rennie of American Electric Power's Fuel Supply Department, Donna Schickel of American Commercial Barge Lines, Carol H.

Leigh of the Ohio River Company, and Paul M. Kvederis of Consol. When I needed information on early Ohio Valley history, Helen Tanner of the D'Arcy McNickle Center for the History of the American Indian at Chicago's Newberry Library kindly provided it.

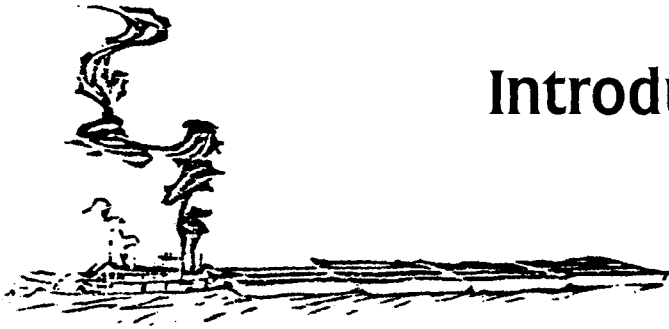
Some of the material in this book was published earlier, in different form, in the pages of *The Herald-Dispatch*, *The New York Times*, *Goldenseal*, *Heartland Boating*, and a special newspaper supplement on the "Always a River project," published by the *Pittsburgh Post-Gazette* and edited by R. Jay Gangeware, editor of Pittsburgh's *Carnegie Magazine*.

Finally, let the record clearly show that this book could not have been written without the wholehearted cooperation and assistance of Ashland Oil. When I first met to discuss my plans for the book with Dan Lacy, Ashland's vice president of corporate communications, I was hoping I could talk him into letting me spend some time on one of Ashland's towboats. Lacy beat me to the punch, inviting me aboard before I'd even summoned up the nerve to ask. I am in his debt. I'm indebted also to Zane Meek, who, as Ashland's administrative manager of marine services, made arrangements for me to travel aboard the *Paul G. Blazer*.

Captain Ronnie Davis and the crew of *Blazer* made me feel welcome and patiently answered all of my thousand and one questions, no matter how trivial or silly.

When Captain Davis asked me why I had come aboard the *Blazer*, I told him I was "trying" to write a book about the river.

Here, at long last, is that book.



Introduction

On June 27, 1957, veteran Kentucky lawmaker Thruston Ballard Morton arose in the U.S. Senate and gave a full-dress speech on the growth of the Ohio River Valley, proclaiming it "the Ruhr of America."

A Louisville businessman, Morton won election to the House in 1946 and was reelected in 1948 and 1950. In 1952, he decided to go back to private business, but President Dwight Eisenhower intervened, convincing Morton to become an assistant secretary of state. In 1956, he again yielded to Eisenhower and successfully ran for the Senate, where he served until he retired from politics in 1968.

When Morton died in 1982, an unidentified newspaper obituary writer described him as a "blunt-talking, blunt-acting politician." And that he was. Certainly nobody ever would have taken the senator for a poet. But on this particular day in the Senate, Morton was almost poetic as he spoke of how "the beautiful Ohio" was discovered by La Salle, the French explorer, and of how the river became "the best friend" to the valley's early settlers, first carrying them to their new homes and then bringing them the goods they needed.

The Republican lawmaker summoned up romantic recollections of the steamboats that once crowded the Ohio, and he talked about how many of the places where those paddlewheelers put into shore had grown "from log-cabin villages to brisk little towns." He detailed the successful effort by the U.S. Army Corps of Engineers to harness the Ohio and transform the unruly, unpredictable river into a broad watery highway. He spoke of how river traffic had multiplied beyond the wildest dreams of those who planned and built those improvements. He cited the efforts of the Corps of Engineers in building floodwalls and flood-control reservoirs to protect the valley and its residents from the rampaging river.

And, at the heart of his remarks, Morton emphasized the "great industrial boom" the Ohio Valley had experienced in the years since World War II had ended.

"To call it America's Ruhr is almost an understatement," he said, hail-

ing the billions of dollars that had been invested in new power plants, modernized steel mills, new chemical plants, and other projects, many of them linked to the region's "almost unlimited coal supplies, which can be barged on the river." Petroleum shipments on the Ohio, he noted, had gone from 306 million ton-miles in 1935 to 5.2 billion in 1955. (The ton-mile is a unit of freight transportation measurement equivalent to a ton of freight transported one mile.)

The Ohio Valley, Morton said proudly, was producing "nearly three times as much steel as the celebrated Ruhr Valley." The Ohio, he boasted, "now surpasses the Rhine, Europe's `chemical river,' in chemical plant investment." Overall, the senator said, upwards of ten billion dollars had been invested in new and expanded industrial plants on the Ohio and its tributaries from 1950 to 1957.

"There are," said Morton, "many factors which account for this tremendous rebirth of industry in the Ohio Valley, but most of them, either directly or indirectly, come back to the waterway itself."

Today, sadly, a good many of the Ohio Valley plants and factories that Morton pointed to with such pride are shuttered and closed, victims of the Rust Belt woes that have afflicted so much of industrial America. Others are limping along, with sharply reduced workforces and curtailed production, and face an uncertain future.

But the river remains.

And, as it has for decades, the Ohio River continues to be a key element in the economy of the region it traverses and, indeed, in the national economy as well. Millions of Americans who live in the multistate region the Ohio drains owe their jobs to the river. Although the number of people who actually work for barge firms or other river-related businesses may be small, the river's indirect impact is immense. Without it, cities such as Pittsburgh, Cincinnati, and Louisville would not have become the thriving metropolises they are today. Dozens of coal-fired electric power plants are located along the Ohio and its tributaries. Collectively, they account for fully 10 percent of the electric power that is generated in this country. And, despite the Rust Belt phenomenon, many industries that require or produce large volumes of solid and liquid bulk commodities still operate along the Ohio and still look to it for their transportation needs. Answering those needs keeps busy a fleet of hundreds of towboats and thousands of barges, some of them owned and operated by giant corporations, some little more than mom-and-pop operations.

The waterway systems of the United States contain 25,777 miles of navigable channel. This includes the inland or river waterways, the intercoastal waterways, the Great Lakes and St. Lawrence Seaway system,

the coastal deep-draft channels and harbors. Statistics compiled by the Corps of Engineers show that in 1992 a collective two billion tons of commerce moved on the U.S. waterway systems.

The Ohio River navigation system—the Ohio itself plus its navigable tributaries—accounts for roughly 10 percent of those 25,777 navigable miles. The Ohio and its many tributaries drain a basin that covers 204,000 square miles and portions of fourteen states. The Ohio basin drains 95 percent of Kentucky; 80 percent of Ohio, Indiana, West Virginia, and Tennessee; 30 percent of Pennsylvania and Illinois; 20 percent of Virginia; 10 percent of Alabama; tiny portions of North Carolina, New York, Georgia, and Maryland; and even the northeastern tip of Mississippi. The topography of this basin varies from rugged mountains to flat plains. The eastern portion is dominated by the Appalachian Mountains. West of these mountains and south of the Ohio, the landscape gradually changes to rolling plains through most of Kentucky and Tennessee. North of the Ohio, broad valleys extend from southwestern and central Ohio through central Indiana and into southern Illinois.

The Ohio is navigable for its full 981-mile length—from Pittsburgh, where it's formed from the confluence of the Allegheny and Monongahela Rivers, down to Cairo, Illinois, where it joins with the Mississippi.

Together, the Ohio and its navigable tributaries—primarily the Allegheny, Monongahela, Kanawha, Green, Cumberland, Tennessee, and Kentucky—total 2,400 miles in length. The Corps of Engineers reports that in 1993 the Ohio and its tributaries carried more than 227.5 million tons of traffic, up sharply from the recession-year low of 150.4 million tons recorded in 1983. Of that 227.5 million tons, nearly 60 percent—135.3 million tons—was coal, whereas 29.1 million tons was sand and gravel, 23.4 million tons was petroleum and chemicals, 11.3 million tons was grain and other farm products, and 18.1 million tons was classified as "other commodities."

The story of coal and the story of the Ohio River are so closely intertwined that there's no way to talk about one without talking about the other. Thus, even though this is a book about the river and the role it plays in the economy of the region it serves, it's also, by necessity, a book that talks a great deal about coal.

Approximately 65 percent of the coal mined in West Virginia and Kentucky is moved to market on the Ohio River system. Coal from Pennsylvania, Illinois, Indiana, and Ohio also travels the Ohio River system and supplies many of the coal-consuming power plants and steel mills that are situated along the Ohio and its tributaries.

The Ohio River itself carries about 86 percent of the total tonnage carried by the Ohio River system. It has experienced slow but steady

growth in traffic since the mid-1960s, with some decline during the recession of the early 1980s. Projections are that Ohio River traffic will continue to grow well into the next century.

Ideally, the best way for managing a waterway is without locks and dams. The Mississippi River below St. Louis and the Missouri River system are of this open-river design. The open-river method not only eliminates the tremendous expense of designing and constructing the locks and dams but also the headaches posed by the long and costly delays associated with locking vessels between navigation pools. But the upper Mississippi, the Ohio, and their tributaries would not be navigable were it not for a system of slack water pools created by a series of locks and dams built by the Corps of Engineers. The dams maintain a relatively constant depth to permit year-round use by river traffic. Navigation locks are the means by which river traffic is passed from one level to another created by the dam. Without this system of locks and dams, river traffic on the Ohio could never have developed to the extent we know today—and the industrial potential of the Ohio Valley might never have been unlocked.

The Ohio River carries more commercial cargo than the Panama Canal. Yet, many who live along its banks know little more about it than about the Panama Canal. And frequently less.

Millions of tons of coal, petroleum products, chemicals, and other cargo travel the Ohio in long strings of barges pushed by powerful towboats. (The first thing one learns about a towboat is that it doesn't "tow" anything.) Each barge holds the equivalent of at least fifteen railroad cars or more than sixty trucks. And a typical tow of barges may stretch the length of three or even four football fields. Barge transportation is no match for either railroads or trucks when it comes to speedy delivery. A typical barge tow moves downstream at ten miles per hour and upstream at less than half that—hardly a pace that's going to set any speed records. But barging is highly fuel-efficient. Its appeal to shippers rests not with speed but with lower costs. A truck can carry a ton of coal 59.2 miles on a gallon of fuel; a towboat can carry that same ton 513 miles.

Safely pushing these mammoth tows of barges up and down the Ohio is a difficult, demanding, and sometimes even dangerous job. A job that not everybody is cut out for.

"It takes a different breed," says Wilma Parker, the hardworking cook aboard the *Paul G. Blazer*, one of a fleet of towboats operated by Ashland Oil.

And she's right. It does.

To get a personal look at what it's like to work on the Ohio River, I spent eight days aboard the *Blazer* as it traveled the Ohio from Hunting-

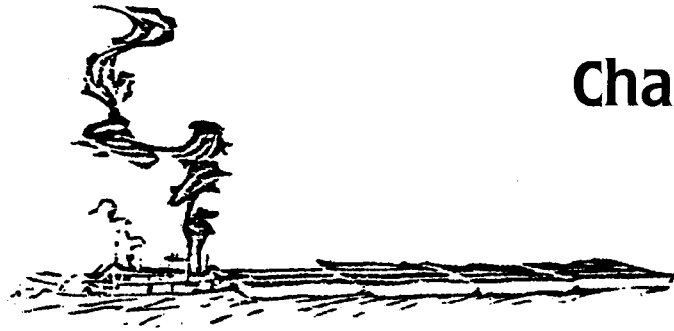
ton, West Virginia, to Pittsburgh, up the Allegheny and the Monongahela for a stretch, and then back to Huntington.

I'm a newspaperman by profession and training, and a good bit of this book is the kind of thing you might expect to read in your daily newspaper. Reporters simply share with their readers what they—the reporters—have heard and seen. To a considerable extent, that is what I have attempted to do in these pages. But interwoven with the narrative of the trip upriver and back by the *Blazer* is the historical background of commerce on the Ohio—of how the flatboats and keelboats gave way to the steamboats and how, in turn, the steamboats were replaced by today's powerful, diesel-powered boats such as the *Blazer.* Much of the book details the development of the river's lock and dam system and the efforts of the Corps of Engineers to modernize that aging system, a continuing story that is as current—and as controversial—as the newspaper that landed on your front step this morning. And, finally, I have found myself unable to resist the temptation to throw in some of the colorful history of the communities that grew up along the river and were nurtured by it.

Mostly, this is an attempt to document what I believe is a largely unheralded story—the story of a big, broad-shouldered river at work. I have focused exclusively on the upper Ohio, which essentially is the highly industrialized river Senator Morton was talking about in his 1957 speech. This is not to say that there's not industry on the lower Ohio. There is. But the river below the Falls of the Ohio at Louisville is a different, lazier sort of stream than its upstream portion. In addition to this key difference, there's the blunt fact that compressing the story of a river nearly a thousand miles long into a volume of this size would be virtually impossible. Dealing with just the upper Ohio has been challenge enough for this writer, thank you.

In his *Life on the Mississippi,* Mark Twain wrote: "The face of the water, in time, became a wonderful book . . . and it was not a book to be read once and thrown aside, for it had a new story to tell every day."

This is simply one of those many stories.



Chapter 1

Captain Ronnie Davis is not happy. And he's getting unhappier by the minute. Davis, skipper of the *Paul G. Blazer*, is a veteran of twenty-six years working on the Ohio River. Seated in the pilothouse of the *Blazer* on this Saturday morning in a recent July, he is drawing up a chart showing the arrangement for the long tow of barges the towboat will shove upriver on its next trip. It's a task which summons up all the lessons he has learned in his years on the river. The individual barges are of differing sizes and are bound for various destinations, so there's a real knack to knowing just where in the tow to place each one. Put one in the wrong place and then you have to tear apart the entire tow to get to it when you're ready to drop it off at its destination. That takes time. And time is money on the river.

A heavy smoker, Davis lights yet another cigarette as he works on the sketch he's plotting on his clipboard. The blue jeans he's wearing are worn and faded. The kind a concerned wife might be tempted to throw away if she thought she could get away with doing so. His sport shirt gaps to show a stomach with a decided bulge to it. His hair is short and neatly cut, with just a little gray showing through here and there. As he works on the chart, he has a pair of dime-store glasses perched low on his nose.

He finishes his task, takes off his glasses, and grumbles to a pilothouse visitor: "We've been here long enough that we could have put out a mailbox and started getting our mail. Shucks, we could even have registered to vote and signed up for food stamps."

Kidding about it makes the time go a little faster. But only a little.

The *Paul G. Blazer* is a gleaming white towboat with a gross weight of 730.95 tons, a length of 150 feet, and a 45-foot beam (width). Owned and operated by Ashland Oil, she was built at the Quality Shipyards in Huoma, Louisiana, in 1987. Constructed for strength, not speed or grace, she squats in the water. She's powered by two Caterpillar six-cylinder diesel engines, each of which develops an impressive 2,100 horsepower,

providing the boat the considerable muscle that's required to push a heavy tow of loaded barges that can be longer than a cruise liner.

But at the moment those big Cat diesels are silent, for the boat's not going anywhere. It's motionless, moored on the West Virginia bank of the Ohio River, at Mile 316 of the river. That's 316 miles downriver from Pittsburgh where the Ohio is born when the Allegheny and the Monongahela Rivers join. Rivermen on the Ohio always calculate distances on its 981-mile length in terms of how far they are from Pittsburgh.

The spot where the *Blazer* is moored is Ashland Oil's "fleeting harbor." In this instance, the word "fleeting" doesn't refer to time or anything else "passing swiftly." Rather, it indicates that this is home base for the company's fleet of barges and towboats and the locale where tows are assembled for their trip up or down the river.

The Ashland fleeting harbor is just upstream from the mouth of the Big Sandy River that, as it flows into the Ohio, marks the border between West Virginia and Kentucky. Just out of sight beyond the trees that line the riverbank above the harbor—"up the bank," a rivermen would say—is the little (pop. 3,748) West Virginia town of Kenova, its unusual name compounded from the names of Kentucky, Ohio, and West Virginia. The name reflects the town's location at the point where the three states converge.

When Kentucky was separated from what is now West Virginia, surveyors were sent in to establish and map the border between the two states. The boundary line, they were told, was to extend up the Big Sandy river to the point where the Tug and the Levisa Forks met to form the main stream. The line was then to extend southward following the largest of the streams, the Levisa. Mother Nature took a hand in the proceedings, however. The day the surveyors arrived at the point where the forks met, the elements were raging and the smaller stream, the Tug, was in violent flood. Or, as folks say in the mountains, it was at "high tide." On the other hand, the Levisa was at normal level. The surveyors had been told to follow the larger stream. And that's exactly what they did. But it was the Tug at "high tide," not the Levisa, and a thousand square miles of what today would have been West Virginia territory went to Kentucky. Of course, some people suggest that the surveyors' "mistake" was in fact no such thing, that they were swayed by certain unscrupulous Kentuckians who invited them in out of the rain to enjoy some liquid refreshment.

Between 1897 and 1910, the Corps of Engineers built three locks on the main stem of the Big Sandy, and one lock each on the Levisa and Tug Forks—the latter being the scene, in the 1880s, of the feud between the

Hatfields and the McCoys, one of the most enduring legends of Appalachia. Songs, books, and movies all have perpetuated the myths surrounding this real event. But the coming of the railroad to the region not only wrote an end to the isolated way of life enjoyed by the Hatfields and McCoys, it also diminished the need for navigation improvements on the Big Sandy. Plans for the construction of nine additional locks on the Levisa and seven on the Tug were abandoned.

Today, the Big Sandy offers a navigable depth of nine feet for only 8.6 miles from its mouth at Kenova. Because of a severe sedimentation problem, the Corps of Engineers must perform frequent dredging to keep the channel clear enough for commercial traffic. In recent years, traffic on the Big Sandy has increased, because of increasing demand for the region's bituminous coal and the already high density of river terminals on the Ohio River around Huntington. At last count, there were fifteen coal terminals located on the navigable portion of the Big Sandy. In 1988, some 12.5 million tons of traffic—79 percent of it coal—were moved on the Big Sandy. Since 1980, coal shipments on the Big Sandy have tripled and total commerce has doubled. This growth has been driven by shipments of low-sulfur coal and is expected to continue over the next several years, a result of the new federal Clean Air Act, which requires that power plants either burn low-sulfur coal or install expensive smokestack scrubbers aimed at eliminating discharges of sulfur dioxide, said to be one of the chemical culprits responsible for "acid rain."

The *Blazer* Makes Ready

Although occasionally dispatched on a quick run down the Ohio to Louisville, the *Blazer*—named for Ashland Oil's legendary founder and longtime chief executive, Paul G. Blazer—mostly operates on the stretch of the river between the Huntington area and Pittsburgh. It comes in from an upstream trip and goes first to the company's repair and fueling dock at Catlettsburg, Kentucky, a thriving Ohio River port since the 1840s. There it takes on fuel and other provisions and then heads back upstream for a mile or so, to Kenova to pick up its tow of barges for another trip.

Generally this whole process is accomplished in only a matter of a few hours. Again, time is money on the river. The quicker a boat can be serviced, pick up a new tow of barges, and be back on its way, the quicker the cargo in those barges can be delivered and the sooner the boat and barges are ready for another trip.

The *Blazer* had arrived at Catlettsburg at 7:00 P.M. the night before, completing its latest round-trip. (Actually, to be completely accurate, we

should say it arrived at Catlettsburg at 1900 hours. Rivermen use the same twenty-four-hour clock that's utilized by their brethren who sail the high seas.) At Catlettsburg, the craft took on 41,900 gallons of diesel fuel and 10,000 gallons of water.

"The tank will hold 100,000 gallons of fuel," explains Davis. "But we seldom take on more than 72,000 gallons because it makes the boat ride too low in the water." A boat that rides too low is a boat that's in trouble if it finds itself in a shallow section of river.

Fueled and ready, the *Blazer* made its way back upstream to the fleeting harbor to pick up a new set of barges for the next trip. But all of the barges weren't loaded yet. And so, midmorning of Saturday finds the *Blazer* still here, having spent the night. It can't go anywhere until each barge is filled and ready. It's a waiting game.

Davis crosses the pilothouse to a little table where the coffeepot has stopped its gurgling, indicating that yet another pot is ready.

"Well," he says, "I don't reckon we're going anywhere for a while yet, so we might as well relax and have another cup of coffee. Looks like it's gonna be a long morning."

The radio blares to life, and Davis puts his coffee cup down and hastens to answer it. He listens, copies down the brief message, and shakes his head. The dispatcher, it seems, has added yet another barge to the tow. This means the chart that Davis has so artfully drawn will have to be done over, with a new scheme that takes into account the addition of the extra barge.

That will take time. But then right now, time is something the captain has plenty of. He laughs—and thinks of another joke.

"This reminds me of these two old boys who were talking one day. One of 'em said he was gonna fatten his hog on acorns. `Won't that take a long time?' the other one asked. `What's time mean to a hog?' says the first."

Davis takes his carefully drawn barge chart from the clipboard, crumples it into a paper ball, and tosses it in the wastebasket. The glasses—"I just went down to the dime store and kept trying on different pairs of 'em until I found one that did the trick"—go back on his nose and he sets to work on drawing a revised version.

As you doubtless have guessed by now, I am that visitor with Captain Ronnie Davis in the pilothouse of the *Blazer* on this July morning in 1992. I have wangled an invitation from Ashland Oil to ride the towboat upriver to Pittsburgh and back so I can get a firsthand look at what it's like to live and work on the Ohio.

A native of Huntington, I have spent better than a half century living little more than a stone's throw from the banks of the Ohio. Yet, like most

other people up and down the river, I long took the Ohio for granted, remaining mostly ignorant of its history, its heritage, and its importance. In that sense this book is something of a personal journal of discovery.

I am keyed up for the trip and ready to go. I had been told that we would be leaving late Friday night so I had come aboard about 8:00 P.M.—er, make that 2000 hours. I'd been escorted aboard by Zane Meek, Ashland's administrative manager of marine services, and welcomed by Captain Davis, who showed me where I could stow my gear and then took me on a brief tour of the boat.

A Quick Look Around

One of seven towboats in the Ashland Oil fleet, the *Blazer* has three decks, topped by a glass-enclosed pilothouse. The pilothouse is surprisingly spacious. As I would discover during the trip ahead, all that glass makes it so bright that dark-tinted shades must be kept drawn over the windows much of the time. Nonetheless, the view the large windows offer is a nearly unobstructed 360 degrees. The big discovery the pilothouse offers for a visitor who is unfamiliar with modern towboats is that there's no pilot wheel. Instead of a wheel the boat is steered by a set of chrome tillers.

Within easy reach of the captain—or the pilot—are both a radio and a cellular telephone, two radars, and a two-way intercom system that's piped into every part of the boat. On a table only a step or two away from the captain's chair is a cabinet with a fax machine and the boat's official log. That's also where the coffeepot perks away. There's a chair for visitors; over the next eight days my bottom would become thoroughly familiar with it. A padded cushion on a storage chest at the rear of the pilot house provides still more seating. Rivermen call this the "lazy bench."

The boat is totally air-conditioned. It boasts two units, one with a fifteen-ton capacity and the other a ten-ton, and there's also a big window unit in the pilothouse.

Just below the pilothouse is the smallish third deck, which includes the captain's cabin, a guest cabin where I would be staying, and a small closetlike room that houses some of the ship's electronic gear. An exercise treadmill takes up most of the little unused floor space in the electronics room. (During my eight days aboard, I would never see anyone use the treadmill.)

The enclosed portion of the second deck is bisected by a narrow hallway. On the port side—to those of us who are landlubbers that's the lefthand side of the boat, as you face forward—is the cook's cabin and

two cabins for the deckhands. On the starboard, or righthand, side are the pilot's cabin and two more crew cabins. Each cabin has its own toilet facilities, with a washbasin and shower. Outside on the second deck, at the rear, are the boat's two smokestacks and a small motorboat carefully stored away, ready for use.

Across the bow of the third deck is a work area that's dubbed the "doghouse." It's from here that the deckhands make their way to and from the barges. Like every part of the boat, it's clean and neat. Tools are stored away in a neat and orderly fashion. On the starboard side of the third deck is the dining area, the galley (kitchen area), a pantry, and a toilet. On the port side is a crew lounge, a laundry room, the chief engineer's cabin, and, right beside it, the control booth for the engine room. The separate control booth—which looks for all the world like something from mission control at Cape Kennedy—is necessary because of the tremendous noise produced by the boat's diesel engines. Earplugs are mandatory for venturing into the engine room, and, as I discovered when Captain Davis and I paid it a brief visit, even with the plugs the noise is so intense as to be almost physically painful.

My ten-minute tour of the boat left me totally confused and absolutely convinced that I would never be able to find my away around the various hallways and stairs.

Returning to the pilothouse, Captain Davis and I chatted for a while, obviously feeling each other out, sizing each other up. I learned that, like most captains on the river, Davis started out as a deckhand and worked his way up over a period of years.

"The river," he said at one point, "is always changing. If you ever think you know all there is to know about it, you're not fooling anybody but yourself."

I dutifully wrote the quote down in my spiral-bound reporter's notebook, sure I would want to use it somewhere. But I wasn't up to talking any more. I was tired. And the prospect of that bed down in the guest cabin suddenly seemed very inviting. So I excused myself, called it a night, and headed for my cabin.

There, I quickly undressed and climbed into bed—not the cramped, militarylike bunk I had anticipated but a real, honest-to-goodness bed. And a mighty comfortable one at that. Within minutes, I was sound asleep.

Finally, We're on Our Way!

The boat's intercom, I would find, is used by either the captain or pilot to give sleeping crew members a wake-up call shortly before they're to

report for their watch. But, in recognition of my special status as a visitor, a crewman was personally dispatched the next morning—and each morning thereafter—to politely tap on my door and rouse me. I rolled out of bed, quickly showered, and dressed. Other than its small size, the bathroom might easily have been mine at home. It was hard to believe I was aboard a riverboat, getting ready—sooner or later—to head up the river to Pittsburgh.

"Should I shave?" I asked myself. No, I decided, I think I'll just let it grow and see what it looks like after a few days. A decision that, though I had no way of knowing it at the time, eventually would prove a source of conflict for me with Captain Davis.

When friends familiar with life aboard the towboats of the Ohio learned that I was going to be a guest on one, they told me I would find the food both good and plentiful. Breakfast proved them right on both counts. (More on the subject of towboat chow later—it's worthy of nearly a whole chapter all its own.) After breakfast, I spent the morning in the pilothouse with Captain Davis, the two of us continuing to get to know each other. But, like him, I was increasingly impatient to get started.

The morning seemed to drag on forever. Aren't we ever getting out of here?

Finally, having finished the intricate making of his barge chart, Captain Davis sets about the business of "making tow"—a process which involves maneuvering the towboat into position to pick up a barge or barges. A soft thud and a shudder means the boat has pulled up to a barge and nudged against it. Deckhands, each wearing a life jacket and heavy gloves, then are dispatched out onto the tow to lash the barge into place with heavy steel cables.

The captain now is too busy for small talk with a visitor, so I am left to muse about the chain of events that has taken me out of my office as a newspaper editor and brought me here to the pilothouse of the *Blazer*.

I was born in Huntington, West Virginia—just minutes upstream from where we are moored this morning. And other than two years when I was away at school, I have always lived in Huntington. But, as I observed earlier, for most of my life the river that flows past Huntington's doorstep was largely a mystery to me, something to be momentarily glimpsed from the car window when driving over one of Huntington's bridges into Ohio or perhaps enjoyed during a Sunday afternoon outing with friends who are boat owners.

But about ten years ago, the way I looked at the river started to change. At the time, I was researching a book on Huntington's history and was finding out that I didn't know nearly as much about my town's story as

I thought I did. Huntington is a railroad town, founded when rail baron Collis P. Huntington picked the site as the western terminus of his Chesapeake and Ohio Railway. But one of the many things I learned as I was researching my local history was that, long before rail tycoon Huntington came along, the site of the new town that would carry his name had been a busy landing spot for many of the riverboats that made their way up and down the busy Ohio. That discovery had sparked my interest in the river and started me reading and learning about it, a process that's continued ever since.

"I think we're finally about ready to get out of here," says Captain Davis, interrupting my reverie.

And, at the same time, a good-looking young fellow comes up the stairs—or "ladder," in river talk—and into the pilothouse.

"Good morning," the new arrival says.

"Well, what do you say now, Ronnie?" replies the captain, offering what I soon would discover was his standard all-purpose greeting for everybody in every situation.

Introductions are made, and I find that the new arrival is Ronnie Burge, the *Blazer*'s pilot, here to relieve the captain and take command of the towboat for the next six hours. Yes, this is a boat with two Ronnies. Confusing? Obviously. But not as much as you might think, for everyone aboard recognizes the potential for confusion and thus makes a special effort to distinguish which Ronnie they mean when they refer to one of them.

Every towboat has two crews, with the members of each crew working thirty days straight and then enjoying thirty days off. The crew that's aboard at any given time is divided into two groups or watches, so that the boat is fully manned twenty-four hours a day. You work six hours, then you are relieved by your counterpart and have six hours off. Then you work another six hours, have six hours off, etc. The watches change at 6:00 A.M., noon, 6:00 PM., and midnight—or 0600, 1200, 1800 and 2400 hours. It's a tough schedule, and many newcomers to the river have trouble growing accustomed to it. Some never do and so depart to find other work elsewhere.

This trip the *Blazer* has a crew of eleven, which is more or less average for a towboat of its size. Included are Captain Ronnie Davis, pilot Ronnie Burge, chief engineer Steve Bellomy, mate Gary Kirk, mate Jeffrey Brown, and tankerman Steve Scott. There are three deckhands—Dorsey McGlone, Matthew E. Sigler, and Brian Hatfield. It's the deckhands who couple and uncouple the barges, keep the boat clean, and perform countless other chores. Rounding out the crew are trainee Philip Filekman and cook Wilma J. Parker. With the cook working more or less her own

schedule, this means that either the captain or the pilot and four men are on duty at all times. At this point, even though I've been on the towboat overnight and had breakfast with some of the crew, there are others that I've yet to meet, a result of the boat's six-hours-on, six-off schedule.

Captain Davis briefs the pilot on the situation, telling him that he thinks the last barge will be filled and ready for us in a matter of minutes. Then he heads down below to the galley for his midday meal. Afterwards, as is his custom, he will stretch out in his cabin and try to nap until it's time for his next watch.

And before long, with pilot Burge at the helm, we in fact have all our barges snugly in place and start pulling away from the bank and out into the channel. Finally, we're on our way!

We're pushing a group—or "tow," as rivermen would call it—of nine barges ahead of us. Just as a locomotive may pull a long freight train that includes cars owned not just by it but by several railroads, some of the barges in our tow are owned by Ashland Oil and some by other companies.

Towboats push a tow of barges rather than pulling it because it's far more efficient. In the bow of a towboat are two "knees"—upright irons that are positioned against the end of a barge. The barges themselves are lashed together, generally in pairs, with six or eight making up a typical tow.

Small barges, however, sometimes are ranked three abreast, and as it happens that's the case this trip. Snug against the knees of the *Blazer* are three small barges—"small" in a relative sense, of course. Each of the three is 35 feet wide and 195 feet long. The three carry designations that are combinations of letters and numbers—the AO-16, AO-102, and B-56. Then coupled to the other end of the three small barges is a pair of barges that are wider but shorter in length—52 feet wide and 147.5 feet long. These are the AO-315 and the AO-354. Coupled to these are the four remaining barges, ranked in pairs. Each of the four is slightly different in size. The C-239 is 52.5 feet by 295 feet, the C-201 is 50 by 290, the S-251 is 54 by 295, and the B-212 is 52.5 by 290. As a result of the odd sizes, one side of the tow is 10 feet longer than the other. The total length of the barges and the *Blazer* itself comes to an amazing 1,082.5 feet.

I ask Ronnie Burge, who will steer this mammoth rig up the Ohio for the next six hours, if this is a typical tow for the *Blazer*.

"Yes," he says.

And the cargo, I ask, is that also pretty much standard stuff?

"More or less," he says.

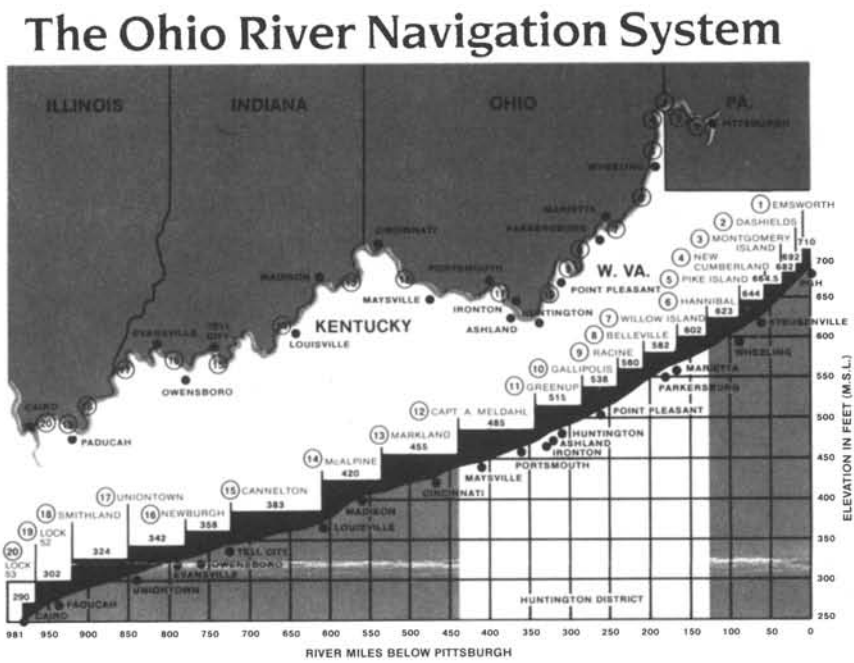
Obviously, I have my work cut out for me if I'm to convince Burge to give me anything more than one- or two-word answers. Some folks are

like that in talking to you when they know you have a note pad and a tape recorder at hand. They figure that anything they don't say can't be used against them.

The manifest—a document which lists each barge and its contents—shows that barge AO-16 carries 10,000 barrels of zylene (a mineral spirit), the AO-102 has 10,000 barrels of lubricating oil, the B- 56 has 8,300 barrels of kerosene and diesel fuel, and the C-239 has 22,000 barrels of diesel. According to the manifest, the other barges all carry no-lead gasoline in varying amounts. Barges AO-315 and the AO-354 each have 12,500 barrels, the C-201 and the B-212 each have 24,500 barrels, and the S-251 has 24,000 barrels.

Ashland Oil's "Neighbors"

The Corps of Engineers issues a series of chart books that give a mile-by-mile rundown on the river, indicating the channel line, listing navigation aides, and generally passing on most everything that someone traveling along that stretch of river would need to know. The chart book for this section of the Ohio warns: "The reach of the Ohio River from Mile 304 to Mile 328 is a congested section of the waterway." And indeed it is,



Map courtesy U.S. Army Corps of Engineers.

for Ashland Oil is only one of several firms that operate various docks or terminals along this particular stretch of the Ohio. Indeed, Ashland Oil's "neighbors" constitute a virtual Who's Who of companies operating on the river, including two of the biggest—the Ohio River Company and American Commercial Barge Lines.

One of the oldest names on the river, the Ohio River Company, operates coal-loading terminals at Kenova, adjacent to Ashland Oil, and just upstream in Huntington. It was 1925—when steam-powered stern-wheelers still ruled the river—when the Ohio River Company first began transporting coal and other commodities on the Ohio. Today, it boasts a fleet of 2,500 barges and 98 boats and is the leading carrier of coal on the inland waterways. In addition to coal, the company's barges also transport grain, steel, scrap iron, phosphates, and other cargoes.

In 1956, the Ohio River Company's parent firm—West Virginia Coal and Coke Corporation—changed its name to Midland Enterprises. Headquartered in Cincinnati, Midland operates a number of subsidiaries. Its Red Circle Transport Company operates along ocean and coastal routes. Chotin Allen Marine Services of Baton Rouge, Louisiana, is a well-known repair yard and barge builder. The Walker Companies of Paducah, Kentucky, operate machine and diesel shops and offer towing services. Also located at Paducah is the John Hancock Training Center, a floating barge training facility that offers hands-on instruction for Midland's crews. Midland itself is part of Eastern Enterprises, a Boston-based holding company.

In 1926, the Ohio River Company's first full year of operation, it carried 399,000 tons of cargo. In 1959, the year the company's parent firm changed its name to Midland Enterprises, it carried 13 million tons. And in 1992 it carried 62.4 million tons, with coal accounting for roughly two-thirds of that total.

Another Ashland Oil "neighbor," which operates a coal-loaded terminal virtually next door to the Ashland dock, is American Commercial Barge Lines, a unit of the giant CSX Corporation. CSX is a direct descendant of Collis P. Huntington's old C&O Railway. With 123 towboats and more than 3,300 barges, ACBL is easily the largest towing company on the nation's inland waterways. Contrary to what one might expect, joint operations between ACBL and CSX's rail unit don't account for a major portion of either unit's traffic. In fact, the 2.5 million tons of coal loaded annually at ACBL's Kenova terminal comes not from CSX rail cars but those of the Norfolk Southern.

ACBL has two major subsidiaries. One is Jeffboat—located just down the road from the company's Jeffersonville, Indiana, headquarters—which builds and repairs barges and towboats. Since 1938, Jeffboat has

built thousands of barges and hundreds of boats. During World War II, it built 140 Navy vessels—8 patrol craft, 12 tankers, and 120 LSTs. Over the years, it's built countless towboats and a number of specialty vessels, such as the excursion boats *Mississippi Queen* and *General Jackson*. In 1992, Jeffboat built 243 barges and one towboat.

The company's newest venture, WATERCOM, is the river equivalent of a "Baby Bell." WATERCOM provides telephone services and computer connections to towboats and on other craft. Since going into operation in 1986, WATERCOM has linked together the entire waterways system with a new telephone voice and data system. Now, anyone who wants to call a specific towboat can dial the boat's phone number and get a quick, undistorted private call to anyone on board. Although ACBL originally developed the system for its own fleet of boats, the company now offers it to every other major barge carrier, and most have installed it. WATERCOM represents a quantum leap in river communications. With the radios WATERCOM replaced, captains often had to wait several hours before getting through to a marine operator. Then there was static and interference. Often the boat would go into a blind spot and the transmission couldn't be heard. Static and interference no longer are a problem. And no longer is one's conversation overheard by everyone else on the river.

ACBL has taken advantage of the data connection the WATERCOM system allows and has computers in the pilothouses of most of its long-haul boats. Since boats, like cars, are more fuel efficient at less than full speed, captains set their speeds according to the recommendation of the computer. The computer records the depth of the water, the speed of the current, the draft of the tow, and the speed of the towboat. Given that information, the management system takes the average daily cost of each barge and the time needed to reach its destination and calculates how fast the boat should go. It adjusts those figures every fifteen minutes, as river conditions change. That way each tow moves at the speed that will insure the maximum return—and customer satisfaction.

The computer system also keeps the boat's log. Four times a day, without anyone ever talking with the captain, a central computer located in Jeffersonville calls into each boat's computer and records the log. Thus, dispatchers know where every barge is and what the captain has done in the past six hours, as well as the speed and water conditions on every tow. The computers have been installed on forty of the company's boats thus far. Coming up next: the installation of similar computers in engine rooms to help boats' engineers improve engine efficiency and foresee potential problems.

The *Blazer* passes under the old Norfolk and Western Railroad Bridge

at Kenova. Bridges are something most of us take as much for granted as we do the river itself. Not so rivermen. For them, approaching every bridge is a challenge as they thread their boat and a long tow of barges through the piers and under the span. From Pittsburgh to Cairo, the Ohio is crossed by more than eighty bridges. Some are tougher to negotiate than others. Bridges located close together present the toughest challenge because there's so little room for error. A pilot does it right the first time or else. Any miscue can send the tow crashing into a pier, snapping the cables holding the barges together and sending them every which way. Retrieving them is a big job. So is explaining things to the Coast Guard.

Once we've cleared the N&W Bridge, there are more neighboring river operations to be seen, on both banks. On the side of the river that's the state of Ohio, there are the fleeting harbors of, first, South Point Barge Company, then Economy Barge Repair, and then McGinnis, Inc., a repair yard with a 2,500-ton dry dock that can service the largest boats on the river. On the West Virginia side, it's Union Concrete Pipe Company, then Kosmos Cement Company, and then the mammoth Oglebay Norton Company coal terminal at Ceredo.

Ceredo (pop. 1,916) was founded in 1857 and named by Eli Thayer, then a member of Congress from Massachusetts, after Ceres, the Greek goddess of grain and harvest, because of the agricultural opportunities apparently existing there at the time. One of Ceredo's first settlers was a man by the name of Z.D. Ramsdell who, in 1857, built a handsome two-story brick home that in recent years has been restored and today attracts a steady flow of visitors.

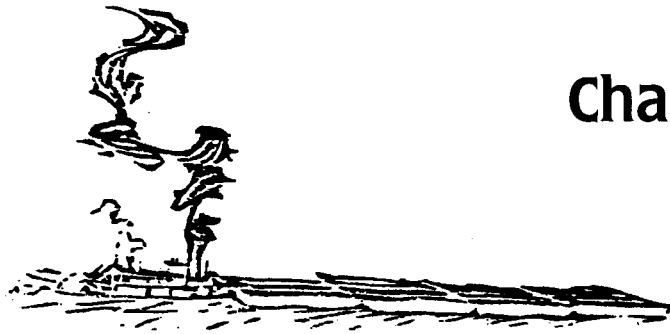
But Ceredo is known to rivermen not for its historic Ramsdell house but for the Oglebay Norton terminal that stretches along the bank for two miles. The terminal dates back to 1950, when the Truax-Traer Coal Company spent two million dollars, then an unheard-of sum, to construct a coal preparation plant at Ceredo. The plant was designed to receive coal via rail cars, empty them onto conveyors, wash, sort, and crush the coal into prepared sizes, load the coal—into either barges or other rail cars—and then clean the water before returning it to the Ohio. In 1959, Truax-Traer sold all its West Virginia holdings, including the Ceredo plant, to Cleveland-based Oglebay Norton. In 1975, the preparation plant—long a Ceredo landmark—was demolished and replaced with a barge-loading terminal, including a rotary car dumper, belt conveyor, loading boom, and 770-foot floating dock. One of the largest rail-to-river facilities anywhere in the country, the terminal can, if operated at capacity, handle eight million tons of coal a year.

We pass under the West Huntington Bridge, and the city's downtown comes into view ahead of us. Crossing the river from the downtown is the second of the city's three spans, the crumbling Sixth Street Bridge, built in 1925 and soon to be replaced by a new, four-lane span that's now under construction right beside it.

Stretching along the Ohio's edge, just beyond the Sixth Street Bridge, is the city's popular David W. Harris Riverfront Park. Dedicated in 1984, the park includes a broad concrete esplanade and a five-thousand-seat amphitheater with a floating stage fashioned from a recycled barge. In the wake of the historic 1937 flood, Huntington, like many other cities up and down the Ohio River, erected floodwalls to keep out the river, then retreated behind those concrete and earth walls and all but forgot about the Ohio. But gradually more and more cities—and their citizens—are rediscovering the river and its pleasures. Once the Ohio was little more than an open sewer, but pollution controls on industries and cities along the river have had a dramatic impact, resulting in a much cleaner river that every year attracts more and more boaters and other fun-seekers.

In Huntington, a downtown urban renewal project was the impetus for clearing the riverbank of the debris, abandoned buildings, and "hobo jungle" that lined it and installing a handsome park. The park, named for the city's veteran urban renewal chief, David W. Harris, draws an estimated 250,000 visitors a year—enough that city officials are pushing ahead with plans to expand it.

Inspecting Harris Park from my vantage point in the *Blazer* pilothouse, I can't help but wonder how many of those who visit the park realize that it was the Ohio River and its steamboat traffic that lured Collis P. Huntington and the tracks of the C&O Railway to this spot.



Chapter 2

George Washington and Collis P. Huntington aren't names that come immediately to mind when conversation turns to the Ohio River, yet both played important roles in the development of the Ohio as a commercial artery—and, in a quirk of history, their roles were intertwined.

On October 20, 1770, George Washington left the comforts of Mount Vernon for a trip to Fort Pitt (now the city of Pittsburgh) and then down the Ohio as far as what is now Point Pleasant, West Virginia—an undertaking both difficult and dangerous. The purpose of Washington's trip was to locate and make preliminary surveys of land promised to him and his fellow officers in the Virginia militia for their service in the French and Indian War.

As a result of his nine-week trip down the Ohio and back, Washington claimed and was granted vast tracts of West Virginia land—some 34,000 acres in all. Apparently, he made only one attempt to develop any of these holdings. A small colony was established at his direction on the Kanawha River near the mouth of Nine Mile Creek in what is now Mason County. At first the settlement prospered, but in 1777 it was wiped out in an outbreak of hostilities with the Indians. Eventually, Washington's lands would be divided and subdivided until they were of little size and small value.

A more lasting consequence of Washington's western exploration was his role in establishing the James River Company, a canal venture that was the original predecessor of the Chesapeake and Ohio Railway. Hence, the C&O's claim to the slogan it used for many years in its advertising—"George Washington's Railroad." Washington wisely foresaw that unless the original thirteen states were banded together by means of transportation and communication they would be gobbled up quickly by foreign powers and the western expansion of the United States would be frustrated.

Washington wrote Governor Benjamin Harrison of Virginia that the penetration of the Ohio and Mississippi regions could be facilitated and

the hardships of the wilderness reduced if the James River were made navigable west from the Great Falls of Richmond. The James, he added, should be connected with other rivers and with portages to form a line of communication to the Ohio Valley.

The James River Company was formed in 1785, and Washington was elected its president. The company began improvements on the old State Road, located in what is now southern West Virginia, and named it the Kanawha Road. And it began work on a canal system which by 1801 had been pushed through from Richmond some 220 miles or so to Crow's Ferry in the Blue Ridge Mountains. In 1820, the rights of the James River Company were taken over by the state of Virginia, which transformed the Kanawha Road into the James River and Kanawha Turnpike, extending from Covington to the mouth of the Big Sandy. In 1836, the Virginia state legislature granted a charter to the Louisa Railroad Company, which in 1868 became the Chesapeake and Ohio.

A year earlier, in 1867, the legislatures of both Virginia and West Virginia had passed acts "to provide for the completion of a line or lines of railroad from the waters of the Chesapeake to the Ohio River." At the time the rail line extended only from Richmond to Covington, Virginia—a distance of 227 miles.

At this point, the giant figure of Collis P. Huntington entered the picture. "Giant" might well be an accurate word in more than one sense, for Huntington is said to have stood something like six feet, six inches in height, with broad shoulders and an ample girth. Certainly he played a giant role in the nation's rail history.

This is not the place for a lengthy discussion of Huntington's varied and successful life, which truly resembled the rags-to-riches stories so popular in the Horatio Alger novels of his day. Readers who find the following brief sketch interesting and want to learn more about Huntington are referred to *The Great Persuader,* a highly readable biography by California historian David Lavendar. Much has been written about the controversial Huntington, pro and con. Lavendar does his best to present a balanced account, painting the rail tycoon as neither saint nor sinner.

Born October 22, 1821, in Connecticut, Huntington was one of nine brothers and sisters. His father, William, a farmer, was not a good provider, and the education of Collis and his brothers and sisters was spotty. When Collis was fourteen, his father took him out of school and apprenticed him to a neighboring farmer. The youngster's pay was room, board, and $7 a month. The next year he worked for another neighbor, a storekeeper. Collis saved every dollar he was paid, and when he had amassed $175, he bought a stock of goods, loaded it on his back, and set off on the

road as a Yankee peddler. He continued to save and bought first a horse and then a wagon, so he could carry an ever-larger selection of goods.

Marrying in 1844, he settled down, opening a general store in Oneonta, New York, in partnership with one of his brothers. And he might have remained there permanently if gold had not been discovered in California in 1848. Huntington quickly joined the Gold Rush not as a miner but a merchant. His early years in California were hard—lacking the money to rent a storeroom, he initially sold his goods from under a tent—but in 1851 he felt secure enough to return East briefly and bring his wife back to California with him.

In 1855, Huntington made one of the most important moves in his life when he went into partnership with another California businessman, Mark Hopkins. If, as some have said, Huntington was a natural-born salesman, then Hopkins was a natural-born bookkeeper. Their talents were perfect complements. Huntington and Hopkins joined with two other businessmen, Charles Crocker and Leland Stanford, to finance the 1860 construction of a few miles of California railroad. The venture prospered, and the four partners built more. Eventually they would become known in rail history as the Big Four. Hopkins, of course, kept the books (some of which mysteriously vanished when Congress began probing some of the partners' questionable financial dealings), Crocker supervised the actual railroad construction sites, Stanford managed things on the California political scene, and Huntington dickered with the New York bankers and Congress. Over the years, Huntington had such remarkable success in getting both the bankers and the politicians to see things his way that he became known to friend and foe alike as the "Great Persuader." The widely held suspicion, both then and now, is that when other measures failed he did at least some of that persuading with cold, hard cash.

In 1862, Huntington convinced Congress to designate the partners' railroad line, the Central Pacific, as the western portion of the long-dreamed-of transcontinental railroad. Pushing the Central Pacific through the Rocky Mountains to its eventual linkup with the Union Pacific, which had laid its tracks westward, was to fully dominate the lives of Huntington and his partners for seven years. Its successful completion—marked by the driving of a golden spike in ceremonies at Promontory Point, Utah, on May 10, 1869—did not, however, end their interest in railroading. They immediately began to forge another line, the Southern Pacific, which eventually would surpass the Central Pacific in size.

Even this, however, was not enough to satisfy Huntington's amazing energies. Hardly had echoes of the Promontory Point spike-driving died away when a delegation representing the Chesapeake and Ohio called

on Huntington in his New York office and implored him to buy a controlling interest in the all-but-bankrupt rail line. Huntington at first resisted but eventually agreed, acting on his own without any of his partners.

It was obvious to Huntington that if the C&O was to survive, much less prosper, its tracks must be pushed on to the banks of Ohio, where freight and passengers could be transferred to steamboats for the trip on to Cincinnati and other points downriver. In July of 1869, he set out to explore personally the C&O's proposed route to the Ohio. Several locations had been suggested for the new terminus, among them a point at the mouth of the Big Sandy River where it flows into the Ohio, the nearby town of Ceredo and, a bit further up river, the village of Guyandotte, a popular overnight stop on the James River and Kanawha Turnpike and an important steamboat landing. After exploring the area thoroughly, Huntington decided that a mostly vacant stretch of land along the Ohio just west of Guyandotte was best suited for the C&0's purposes.

Legend has it that Huntington's decision was based as much on personal pique as on logic. As the story goes, when the inspection party arrived in Guyandotte, the railroadman tied his horse to a hitching post and entered a hotel—or saloon, insists another version of the tale. While Huntington was inside, his horse somehow managed to reverse its position. Instead of staying in the dirt street, like a sensible horse should, it climbed up on the crude wooden sidewalk in front of the establishment, blocking the sidewalk. Seeing this, the mayor of Guyandotte is said to have marched into the establishment and demanded that the horse's owner identify himself. Huntington came forward, the angry mayor fined him five dollars on the spot, and the next day Huntington announced that he would build a whole new town from scratch, at a site just west of Guyandotte.

Whatever his reasoning in selecting it, the site Huntington picked out was to prove ideal. It was close to vast tracts of timber, coal, oil, and natural gas—all of the natural endowments of an industrial center. In addition, it also boasted a river wharf—Holderby's Landing, which had been established in 1821 by a local farmer and trader, James Holderby.

Huntington placed his brother-in-law, Colonel Delos W. Emmons, in charge of procuring the necessary land. Soon Emmons had purchased nearly five thousand acres. Much of it was reserved for the railroad: for right of way, extensive machine and car shops, engine houses, a depot, and other necessary buildings. The remaining land was divided into lots for resale.

On February 27, 1871, the West Virginia legislature approved an act incorporating the new city, and before the year was over people were

flocking to it. A wood-burning locomotive, the *Greenbrier*, was floated down the Ohio, and a construction crew began laying track eastward from Huntington. Another crew pushed westward. The two crews met at Hawk's Nest on January 29, 1873, and a gala first train arrived from Richmond, carrying a number of VIPs and a demijohn of water from the James River which was emptied into the Ohio with due pomp and circumstance. On the train's return trip, the same demijohn held water from the Ohio for emptying into the James to complete the symbolic gesture. The train also carried something far more vital to the future of the railroad and the new city it served—four carloads of West Virginia coal. A Richmond newspaper, the *Whig*, announced the arrival of the coal and observed that it "promises us abundant supplies of fuel in the future."

Coal Fuels Huntington's Growth

Once the C&O's tracks from Huntington reached the coalfields, a trainload of coal arrived at Huntington every night about midnight. The coal was loaded on barges, ready for boats to take it down the Ohio the next day. Newspaper accounts indicate that sometimes as many as ten thousand bushels of coal were shipped in one day.

In 1873, once Huntington and Richmond were linked, the Cincinnati, Big Sandy and Pomeroy Packet Company—generally known as the "White Collar Line" because of the broad white bands that were painted around the tops of the twin smokestacks of its steamers—started operating between Huntington and Cincinnati. The new line was financed, at least in part, by Huntington and commanded by Captain Washington Honshell. The C&O and the packet line jointly built and operated a large river wharf, where steamboats such as the *Fleetwood*, the *Ohio*, the *Telegraph*, and the *Bostona* regularly tied up.

There were two White Collar boats that carried the name *Bostona*. The second was built in 1879 by the Cincinnati Marine Railway Company and was a typical example of the packet boat of the period—a packet being a boat that carried both passengers and freight. Its wooden hull was a few inches more than 302 feet long, and she was powered by a pair of horizontal cylinders which had a diameter of 25 inches and stroke of 8 feet. Its twin paddle wheels measured 27 feet across. It had a set of railroad tracks laid inside its hull for the movement of freight and fuel coal.

With its 59 staterooms no doubt filled to its capacity of 118 people, the *Bostona* left Cincinnati on her maiden trip to Huntington on December 9, 1879. In the master stateroom, on their honeymoon, were the boat's clerk, Gus Honshell, son of the line's owner, and his new bride, a niece of Collis P. Huntington.

The White Collar Line handled all the freight and passenger business between Huntington and Cincinnati until 1889, when the C&O's tracks were extended on to that city. In 1904, it was purchased by Greene Lines of Cincinnati, a famous river concern perhaps best known to most people as the longtime operator of the steamboat *Delta Queen*.

In years past, Huntington old-timers liked to talk about promenading the riverfront and watching the arrival of the river packets and the transfer of passengers and freight from the railroad to them. Once the C&O reached Cincinnati, the passenger trade quickly declined and the packets disappeared from the river with equal rapidity. The old-timers shook their heads and lamented that the day of river transportation was over. They couldn't have been more wrong.

No longer might a passenger step aboard a packet at Huntington and travel to Cincinnati, but there was still another cargo that needed to get to the Queen City and elsewhere—coal.

Today, the upstream end of Huntington's Harris Park is home to a small marina, another visible sign of the current rediscovery of the Ohio River by boaters, water-skiers, and other fun-seekers. And in one of those quirks of history the marina is located on the spot where once stood one of the humble facilities that helped make early Huntington a prosperous city—and one of the busiest ports anywhere on the Ohio.

For decades, the Huntington coal-dumping facility built by Island Creek Coal Company in 1906 was the last stop for the long trainloads of coal dug from the company's mines in Logan and Mingo counties in southern West Virginia.

Old photographs reveal that the tipple was a strange-looking sort of place. Railcars loaded with coal were shoved by a locomotive onto a wooden trestle that extended far out from the riverbank and over the water. Tracks extended along the trestle and led to a two-story, houselike structure that rested on twin concrete piers sunk in the riverbed. Empty barges then would be shoved between the piers and the coal dumped down from the "house" into them. Along the peak of the roof, a large sign, visible for miles, proclaimed: "Island Creek Coal."

Strange-looking it may have been, but in 1907 the Huntington facility handled 329,461 tons of coal, and Island Creek started building a river operation that soon included two steamboats and eighty-six coal barges. In 1919, Island Creek expanded its fleet by acquiring a steamboat and a large number of barges from the Pittsburgh Coal Company. In 1925, the company added its first steel towboat, the *Sam P. Suit*, and built a new coal-dumping plant on the Huntington riverbank.

Like other companies, Island Creek took its lumps in the Great Depression, but by 1940—when it ordered eight new thousand-ton barges—

it was selling coal in virtually every state east of the Mississippi, as well as in Canada. In the war year of 1945, Island Creek Fuel and Transportation Company, a subsidiary company formed to transport not only the company's coal but that of others as well, carried 1.2 million tons of coal via the Ohio.

In the postwar era, Island Creek, like other river operators, switched to diesel power. In the late 1950s and early 1960s, Dravo Corporation in Pittsburgh built four modern, diesel towboats for Island Creek, each named for a company executive—the *I.F. Freiberger*, the *James L. Hamilton*, the *Albert F. Holden*, and the *Raymond E. Salvati*. In 1963, Island Creek sold all 4 vessels, along with 2 small harbor boats and 199 barges, to American Commercial Barge Lines. It was, as the saying goes, the end of an era.

But hardly the end of coal's important role in Ohio River commerce—as I would find myself constantly reminded in my days aboard the *Blazer*.

Today, Huntington is the busiest port between Pittsburgh and St. Louis, and coal is the reason. Statistics for 1990 from the Corps of Engineers show that Pittsburgh handled 35.4 million tons of cargo, St. Louis 27.1 million tons, and Huntington 17.3 million. By way of comparison, Cincinnati handled 12.6 million tons and Louisville 8.2 million.

Another Bridge and the *Belle*

Its single A-frame tower reaches upward in solitary splendor; the supporting cables stretch downward from the tower in perfect rows like ranks of marching soldiers on a parade field. Cast in concrete rather than assembled with steel girders, it challenges our very concept of what a bridge is supposed to look like. It's the East Huntington Bridge, which comes in view only minutes after the *Blazer* passes Harris Park.

The bridge is a cable-supported, asymmetrical design. The main spans are a hybrid of concrete and steel—concrete for the edge girders and deck, steel for the floor beams. The single concrete pier, set in bed rock 47 feet below the river's surface, climbs 79 feet above the water, with the single wishbone-shaped tower soaring another 294 feet into the air. Sixty-two cables fan out in two planes to attach and support the sides of the span.

For years, the East Huntington Bridge was the subject of debate and controversy about where it should be built. A long list of sites was proposed, debated, and then rejected. In 1964, Hulett C. Smith, then campaigning for governor, promised that, if elected, he would drive across a completed bridge in East Huntington before leaving office in 1969. Smith was elected, but the bridge wasn't built. He was succeeded as governor by Arch Moore, who would spend the next eight years wrestling—un-

successfully—with the city's bridge problem. Jay Rockefeller took office in January of 1977 and became the third governor to be caught up in the Great Bridge Fight. He gamely pressed ahead and actually got the project under construction. "I want that thing finished by the time I leave office," he ordered. It wasn't. Rockefeller served eight years but when he left office, turning the keys to the governor's mansion back over to Moore, the East Huntington Bridge was still under construction. It fell to Moore, in what surely must have been one of the sweetest moments of his long political career, actually to complete and dedicate the bridge in 1985. In the years since, the bridge has faded from the headlines, but its striking design has made it a symbol of local civic pride.

And, as the *Blazer* nears the bridge, the sight that confronts us seems made for a picture postcard, for heading toward us, bound downstream and just passing under the span, is one of the most eye-catching boats to be seen on today's Ohio, the *West Virginia Belle*, one of a new generation of excursion boats that are reintroducing people to the river.

With its gleaming white paint and fancy red trim, its tall black stacks and churning paddlewheel, the *Belle* is a colorful reminder of the boats that traveled the Ohio during the Steamboat Era. True, its paddlewheel is strictly for show. The *Belle* is powered not by steam but by three Cummins KJ-19-M diesel engines. Nonetheless, the boat is a handsome and convincing replica.

Built by Patti Shipbuilding in Pensacola, Florida, in 1988, the *Belle* runs a regular schedule between Huntington and South Charleston on the Ohio and Kanawha Rivers each summer. The trip takes the better part of a day and is especially popular with those visiting West Virginia on charter bus tours. The bus drops off its passengers in one city, then travels empty to the other city and collects them when they disembark.

Captain Mary Gantz—yes, the captain is a woman—co-owns the *Belle* with her brother, Tim, who also is a licensed riverboat pilot. They bought the boat from its original owners and operators, the husband and wife team of Robert and Ruth Kehl of Dubuque, Iowa. The Kehls long had operated tourboats on the Mississippi and had the *Belle* built—at a cost of $3.5 million—when they decided to branch out with a boat on the Ohio. However, with the advent of riverboat gambling in Iowa, they opted to sell their West Virginia boat so they could concentrate all their time and energy on their Iowa operation, where they had a new boat, the *Casino Belle*, built specifically for gambling.

(In January of 1994, the Gantzs sold the *West Virginia Belle* to Aztar Corporation, owners of the world-famous Tropicana Resort and Casino in Las Vegas. A spokesman for Aztar said the boat, after being retrofitted, would become the firm's first venture into riverboat gambling. Its

new home, he said, would be Caruthersville, Missouri, where it would be used as a floating Mississippi River casino. But voter rejection of riverboat gambling in a subsequent local-option election there left the boat's future uncertain.)

I would find during my stay aboard the *Blazer* that those who have spent their lives working on the river are nervous about sharing the river with pleasure craft—not the big party boats such as the *Belle* but the many small boats that crowd the Ohio on weekends and which are attracted, likes moths to a flame, by special events and celebrations.

As we leave behind the *Belle* and the East Huntington Bridge, Ronnie Burge and I talk about the danger that can be only an instant away when you're on the river. Burge recalls an accident he was involved in—one that, I could tell from the way he talks about it, still rankles him.

"We were down at Cincinnati at Labor Day," he says. "We had the *Valvoline* and the *SuperAmerica* in this fireworks deal down there. They parade these boats up and down the harbor, blowing their horns and such. We got up there and sat around for a few minutes, waiting on one of the dispatchers. She got on, and we started back down the river, when this houseboat came around me, cut right in front of me, went about seventy-five feet out in front of me and then just quit.

"There I was with my throttles in . . . and I had to get that thing to back up. We were traveling lightboat—that is, we didn't have any barges in tow. I finally got it backed up. I got it full astern. But I was sure I was gonna run right over 'em. Scared me to death. There was this girl standing right on top of the boat and a bunch of kids on it, too.

"Well, I just barely did bump 'em. Didn't knock nobody down or nothing."

Is that the only accident you've been in?

"Yes—if you don't count the fire in the pilothouse."

A fire? In the pilothouse?

"I was on the *Tri-State* up at Chicago, and I left the pilothouse for a minute to shoot the breeze with the cook. We liked to talk fishing. I went back and found the pilothouse on fire. Everybody accused me of setting it myself so I could get off to go deer hunting."

Obviously, my first impression of Burge as strictly a taciturn type was wrong. Once he gets to know you, he's more than willing to talk.

From Huntington to the Gallipolis Dam

We continue upriver, making good time, passing a half dozen little towns, some so small they're not even incorporated. In most instances, they're

right across the river from each other and some once were linked by ferryboats—Athalia on the Ohio shore and Lesage on the West Virginia side, Miller in Ohio and Millersport Station in West Virginia, Crown City in Ohio and Crown City Station in West Virginia.

At Apple Grove, West Virginia, we pass a Goodyear plant. Surrounded by cornfields, the plant doesn't make tires. It produces polyester resin, which then is sold to other companies that use it to make all manner of items, from soft drink bottles to the microwave-safe trays used for frozen TV dinners. With six hundred workers on the payroll, the plant is the largest private employer in Mason County. (In December of 1992, this plant would change hands, with Goodyear selling it to Shell Chemical Company.)

Just beyond the Goodyear plant—at Mile 279.2—lies the Gallipolis Locks and Dam, the first of many we will have to negotiate during our trip.

A downbound boat comes into view, and its captain hails Ronnie Burge on the radio. No, the captain explains, he didn't want anything in particular. He just wanted to gossip for a minute or two. "I'm just like an old woman," he confesses.

"Did you leave anybody up at the locks?" Burge asks.

"Nope," the captain says and signs off.

While Burge has been chatting with the other boat, the sky around us has grown steadily darker and darker. There's a storm brewing for sure.

When the *Blazer* left the dock at Kenova, the skies had looked threatening. Now it's late afternoon, and Mother Nature is ready to make good on that threat. The rain starts. First a light shower, then steadily heavier and heavier, until we find ourselves in the midst of a real gulleywasher.

Suddenly there's a flash of lighting and a roll of thunder. Then a second and a third. It's a spectacular summer storm. Indeed, no Hollywood special effects expert, no matter how talented, could hope to match it.

"I think maybe we'll just turn on the radar here," says Ronnie Burge.

The radar pulses to life, offering on its screen ghostlike images of the riverbank on either side and the hills in the distance. A bright point at the screen's center is the *Blazer*, and just visible ahead of it is a faint streak of light. That's the long tow of barges the *Blazer* is pushing.

"After you've driven this thing a while, you can put it through a lock just looking at the radar," says Burge.

It appears that won't be necessary today. Though the Gallipolis Dam has come into view ahead of us, the rain abruptly ends—as quickly as it began—and the sun pops out.

Deckhand Brian Hatfield comes into the pilothouse.

"Is there anybody ahead of us?" he asks.

"I don't know yet," says Burge. "I'm just getting ready to call them."

It's not a casual question.

Getting a long tow of barges through the locks at Gallipolis is a tricky two-step process. The newer dams on the Ohio have 1,200-foot lock chambers. But the longest of the two chambers at Gallipolis is 600 feet. The other is only 360 feet. This means that a long tow such as the one the *Blazer* is pushing must be locked through the 600-foot chamber in two sections, turning a process that otherwise would take maybe forty-five minutes or an hour into one requiring an hour and a half to two hours. This, too, was another reason Captain Davis spent so much time deciding where each barge should go in the tow, making sure that it could be broken into two sections, each of which can be easily managed. If there are other boats in line ahead of you, you have to wait your turn. And if some of those also have long tows that have to be broken up and double-locked, the waiting time can be long indeed. There's also the ever-present possibility of accident. Sometimes an errant barge will crash into one of the lock gates, putting it out of commission. That means the waiting can stretch into days while crews work to repair the damage.

"I've sat here for as long as two weeks," says Burge. "At times like that you can come along at night and it looks like a small town. All you can see in the darkness is the lights of the boats tied up waiting their turn."

This time, however, we're in luck. There's only one boat ahead of us. But the deckhands aren't so lucky. They've made their way out onto the tow, ready to loosen the heavy steel cables that lash the leading barges in place. Once the men are out there, the rain returns.

"That's really bad," says Burge. "It quits raining, so you don't take any rain gear with you. Then it starts up again and all you can do is get wet." And that's exactly what the deckhands are getting—wet.

Help is on the way, however. It's 1800 hours and time to change watches. The deckhands in the next watch, clad in their bright yellow slickers, make their way out onto the tow and relieve their drenched coworkers.

In the pilothouse, Burge turns the helm over to Captain Davis, who has arrived to relieve him. The lock gates open and Davis shoehorns the tow into the chamber. There are only inches between the barges and the high concrete walls on either side.

An anonymous piece of graffiti written on the lock wall proclaims: "White Nightmare," whatever that means.

"See those guys up there on the wall," says Davis, pointing to two men, clad in hardhats and life jackets, eyeing the *Blazer* intently. "They

always watch you really close. They don't want you hitting those gates. It doesn't take much to put one of 'em out of commission."

Locking through at the Ohio's new, larger dams, the deckhands have to do little more than throw a few lines. But Gallipolis is different. Lots different. Three hands stand at the head of the tow as it enters the lock. Two secure the head to the mooring pins in the lock while the third, on the barges not locking through, ties a line to a pin outside the lock itself.

The hands untie the front four barges from the rest of the tow; that's all the lock can hold. The gates close. Two hands are inside the lock on the barges. The third has climbed a ladder on the lock wall and joined the lock workers who have secured an attaching cable to the barges inside the lock. He stands atop the lockwall as the water inside is raised to the same level as the river above the dam. After the upper gates open, he walks alongside the barges as a wench slowly pulls them out.

After the barges have cleared the upper gates, they are secured to pins on the lock wall. One hand stays with them. (Coast Guard regulations require that the barges be watched and not left unattended.) The other two hands return to the *Blazer*, Captain Davis eases the rest of the tow into the lock chamber, and the procedure is repeated. Then, once the towboat and the remaining barges have been locked through, the deckhands reunite the two sections of barges. Finally, we're on our way upriver—after a wait of forty minutes and two hours of locking time.

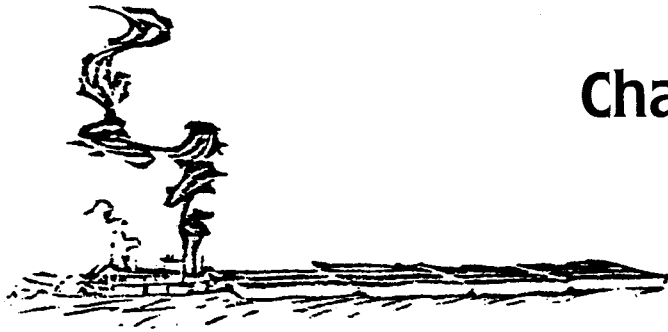
The small size of the locks at Gallipolis isn't the only problem it poses for rivermen. The structure is located in a bend of the river. That didn't make much difference when barge tows were only 600 feet long and towboats didn't run in high water, but today's 1,200-foot tows must approach it with care, especially if the river is running high. The current tends to push upbound tows in toward the bank. Downbound tows must be careful the current doesn't sweep them out of the lock approach and against the dam.

The current forces a tow to approach the lock forcefully, only to encounter calm water which tends to propel the tow forward suddenly, sometimes causing it to strike the lock gates. It's not unusual for the 600-foot lock to be closed for days or evens weeks while its gates are repaired—the result of a barge accident. When that happens, all traffic has to go through the auxiliary 360-foot lock, requiring triple, quadruple, and even quintuple locking.

At this point in mid-1992, work continues on a new $224 million canal at Gallipolis that, once completed and placed in operation, will make double-locking a thing of the past and, it's hoped, lessen the problems presented by the river's bend. Officials say it will be only a few months now before the new canal will be ready to go into service, thus speeding

up traffic and making things a bit easier for all concerned. That can't come soon enough for the *Blazer* and her hardworking crew.

Indeed, there's no better illustration of the long, difficult process that transformed the unruly, unpredictable Ohio River into a dependable watery highway than the story of the Gallipolis Locks and Dam, but to understand fully the significance of that story you have to start at the beginning—when America was young and the Ohio was a very different river from the one we know today.



Chapter 3

Historians agree that it was the Iroquois, the Indian tribe that dominated the Ohio Valley when the first white men came, who named the river. But there the agreement ends. Assertions as to what the name "Ohio" meant range from "beautiful river" to "river of blood." So the reader is left to believe pretty much whatever he or she wishes.

Most, if not all, historians credit René-Robert Cavelier, Sieur de La Salle, with being the first white man to see the Ohio. Born in France, La Salle emigrated to Canada in 1666, joining his missionary brother at Montreal. La Salle was briefly a fur trader but found the life of an explorer far more exciting and in 1669 set out on what would be the first in a series of expeditions. While exploring the unmapped wilderness south of Lakes Ontario and Erie, he came upon the Ohio and descended it as far as the falls just outside today's city of Louisville, Kentucky.

La Salle had claimed the Ohio for France, and in 1749 the French sent a large and well-equipped military expedition down the river. At various spots along the riverbank the expedition buried metal plates designating the river and the surrounding lands as French territory. The metal plates notwithstanding, the British insisted that the Ohio and all the lands surrounding it belonged to them. A showdown between the rival nations was inevitable.

The clash between Britain and France in the Ohio Valley was but a sideshow to the larger conflict between the two in Europe, a dispute which became known as the Seven Years' War. The Treaty of Paris, signed in 1763, ended both that larger conflict and its American phase, generally referred to as the French and Indian War. The treaty also set the stage for the ouster of the French from the Ohio and the river's exploration and settlement by the English.

In 1775, the American colonists began their fight for independence from the British Crown. It was to be a long and bloody struggle, though the Ohio Valley would be barely touched by it. After the American Revolution's end, however, a tide of settlers, many of them veterans of the war with the British, swarmed into the Ohio Valley. In the absence of

any good roads, the Ohio River was the route most of them took.

These new arrivals on the Ohio were a varied lot. Some were men of wealth looking for chances to invest their capital. Many were farmers. Others were blacksmiths, gunsmiths, harnessmakers, or other artisans. Many a future merchant left his home in the east, traveled to Pittsburgh, bought a flatboat, and then headed down the river with a load of goods. These flatboats replaced the canoes of the Indians and the rafts of the earliest settlers. Rude, boxlike affairs, they were clumsy and unwieldy, guided only by a steering oar as they moved downstream with the current. When the river travelers found what seemed like a likely spot, they would beach the craft and then rip it apart for the lumber. The boat no longer served any other purpose, for there was no way it could buck the current and return back up the river.

Before long the flatboats gave way to keelboats, which were larger and could carry heavier loads. They were propelled by men who stood on the deck and pushed the boat forward with long poles which they thrust into the riverbed. Thus, keelboats could travel upstream as well as down. The first two decades of the 1800s were dominated by keelboat commerce. It's estimated that by 1819 more than five hundred keelboats were plying the Ohio between Pittsburgh and Cincinnati. Ranging in length from thirty to seventy-five feet and from five to ten feet in width, they could carry as much as forty tons of cargo. Flour, salt, iron, bricks, and barrel staves went west and south on the river. Molasses, sugar, coffee, lead, and hides were hauled upstream.

In 1817, Loammi Baldwin made an examination of the Kanawha River for the Board of Public Works for the Commonwealth of Virginia to determine what would need to be done to improve navigation. In their *Sternwheelers on the Great Kanawha,* Gerald W. Sutphin and Richard A. Andre offer the following quote from Baldwin's report, which provided a wonderfully detailed description of the keelboats of that era:

> The boats now in use in the Kanawha, and which also navigate the Ohio and Mississippi, are constructed with keels, drawing two to three and a half feet of water, and carry from 25 to 40 tons. . . . In descending (the river), the keelboats are rowed, or shoved, and over some of the shoals pilots are taken on board to navigate them. . . . In coming up (the river), the boat is kept along the banks of the river, and the boatmen walk on the top, take hold of the brush and draw the boat forward, shoving with poles. The labor of shoving . . . is very difficult in ascending the channels of the shoals, where the water is shallow and the current very rapid. Barges, and some of the keelboats, occasionally use large square sails when the wind blows upstream, with which they ascend even the shoals with surprising velocity. [7]

Poling, rowing, or dragging a keelboat upstream was grueling work, and, not surprisingly, it developed a tough breed of men. Like Johnny Appleseed and John Henry, rough-and-tumble riverman Mike Fink was a real person whose exploits became so exaggerated in each retelling of his story that eventually he became more myth than man. The self-styled "King of the Keelboatmen," Fink boasted that he was "half horse and half alligator, suckled by a wildcat and a playmate of the snapping turtle." Stories told about him credited him with a phenomenal ability to handle flatboats, keelboats, cargo, men—and women.

The keelboatmen worked hard—and played hard, as the citizens of many an early river town learned to their sorrow. The free-spending keelboaters were both welcomed and feared by those on the shore, for, while the rivermen spent prodigious sums of money on whiskey and women of easy virtue, they also loved nothing better than a good fight. And if the brawl was one that ended up in wrecking much of the town, it bothered the keelboaters nary a bit. After all, it wasn't their town. Come the next morning, they would be on their way again.

It's no doubt this rough-and-tumble era gave rise to the idea, still widely held today, that those who work on the river are a band of rough-neck no-accounts.

One afternoon while I was in the *Blazer* pilothouse, pilot Ronnie Burge leaned back in his chair and shared a story with me. My suspicion is that, in one form or another, it's a dog-eared tale that's been told by every generation of those who work on the river:

"It seems there was this old woman who had three daughters. One of them married a doctor, the second married a lawyer, and the third, well, believe it not, she married a deckhand. On the morning after their wedding night, the mother questioned each of the daughters, demanding a full account of what had happened. Well, the daughter who married the doctor told her mother: `He made love to me and said he'd buy me a nice new mink coat.' The one who had married the lawyer said: `He made love to me twice and promised to buy me a little red sports car.' And the one who had married the deckhand reported: `He made love to me three times, borrowed ten dollars off me, and then said he'd see me next trip.'"

Rumsey, Fitch, Fulton, and Shreve

Even as roads gradually were pushed into the Ohio Valley, the Ohio River remained the area's primary artery of commerce and the keelboat was the backbone of the trade. But, as many a bone-weary riverman must

have grumbled while wrestling a keelboat upstream, "there's got to be an easier way than this."

And there was—the steamboat.

Despite what many of us were taught in school, Henry Ford didn't invent the automobile. To suggest such is to ignore the considerable achievements of automotive pioneers such as Germany's Carl Benz and Gottlieb Daimler and, in this country, Ransom E. Olds, Alexander Winton, and James Ward Packard. What Ford did, with his first handbuilt creations and then with his immensely popular Model T, which went into production in 1908, was turn the auto from a rich man's toy into a necessity. Robert Fulton, generally credited with being the inventor of the steamboat, played much the same role for it as Ford did for the automobile. Long before Fulton's first steamboat made its successful maiden voyage, other tinkerers had pioneered the idea of harnessing steam to power a boat. Among them: West Virginia's James Rumsey and Kentucky's John Fitch.

On Monday, December 3, 1787, a large crowd gathered on the banks of the Potomac River at Shepherdstown, in what then was Virginia but now is West Virginia's eastern panhandle. They had come from miles around to see James Rumsey demonstrate his new invention: a steamboat. Some came to scoff at what they called "Crazy Rumsey's Flying Boat." Others half believed. All were curious. Among the throng was General Horatio Gates, who had ridden down from nearby Kearneyville. At the appointed time, the inventor started the engine of his curious craft. Slowly—at about four miles per hour—the vessel moved upstream before the now cheering spectators. "By God, she moves!" roared General Gates. And move she did. Rumsey successfully guided his craft a half mile upstream, turned and came back down again, then for two hours plied the river back and forth before the enthusiastic crowd. But, even though the Virginia assembly granted him the sole and exclusive right to navigate Virginia waters with boats "constructed upon a model that will greatly facilitate navigation against the current of rapid rivers," Rumsey was never able to place his steamboat in commercial service and today is mostly a forgotten figure.

Born in Connecticut, John Fitch emigrated to Kentucky in 1787 after serving as a lieutenant in the American Revolution. Settling in Nelson County, he designed and built several successful steamboats which were tested on the East Coast. Between 1787 and 1790, his boats went into commercial service on the Delaware River. And Congress granted him a patent in 1791, but, lacking the money needed to pursue his dream, he returned to Kentucky, where he died, bitter and dejected, in 1798.

Thus, it would be Robert Fulton who, accurately or not, would be

identified as the father of the steamboat. Although Fulton was an American—born on a farm near Lancaster, Pennsylvania in 1765—it is one of those ironies of history that his invention was born in Europe and made its first run on the Seine River in France.

While still in his teens, Fulton devised a skyrocket to celebrate the Fourth of July and, significantly, devised a paddle-wheel boat that he and his friends took on fishing expeditions, thus sparing themselves the backbreaking work of poling their boat along. Seeking his fortune, he became first a gunsmith and later a jeweler's apprentice. In 1786, he determined to become an artist and went to England to study under American-born Benjamin West. But by 1793 he had abandoned art for engineering and published a lengthy treatise outlining various proposed improvements in the canal-building techniques of the day. He also drew up plans for a submarine and had a prototype built, but the craft remained strictly a curiosity. Not so his steamboat. Fulton established a partnership with Robert R. Livingston, then U.S. minister to France, who long had been interested in the steamboat idea, and the two men successfully launched a steamboat of Fulton's design on the Seine in 1803.

Fulton returned to the United States in 1806, having been in Europe for twenty years. Livingston already had returned, and the two set about building a new craft, christened the *Steamboat*, which in August of 1807 made a 150-mile trial run from New York to Albany. By 1808, the boat had been substantially rebuilt and lengthened—to 149 feet—and went into regular commercial service as the *Clermont*. Other boats quickly followed.

In 1809, Nicholas J. Roosevelt, representing Fulton, keelboated down the Ohio and Mississippi, inspecting the channels and studying the prospects for steamboat trade. Roosevelt's subsequent report to Fulton was favorable, and so construction of the steamer *New Orleans* was immediately started in Pittsburgh. Roosevelt suggested that the new boat should be built with a flat-bottomed hull better to negotiate the shallow Ohio.

Launched in 1811, the *New Orleans* traveled down the Ohio and eventually, after finding its way along the new channels cut by the New Madrid earthquake of that year, to the lower Mississippi, where it went into regular service. The *New Orleans* is said to have earned its owners a handsome profit of $24,294 in its very first year of operation.

Encouraged by the success of the *New Orleans*, Fulton and Livingston quickly began building more boats. They held patents on many features of steamboat construction and had obtained an exclusive charter to operate steamboats on the Ohio River. However, monopolies and patents did not "set well" with the people of the west, many of whom had essentially been making their own laws for years. Most folks didn't be-

lieve in such privileges, and soon everyone who had the urge and could raise the necessary capital was engaged in steamboat building.

One such was Captain Henry M. Shreve. On December 1, 1814, Shreve sailed the steamboat *Enterprise* out of Pittsburgh, bound for New Orleans with a cargo of guns and ammunition. The forty-five-ton steamboat had been built at Brownsville, Pennsylvania, by Daniel French and used an oscillating cylinder of his design. Two weeks later, the *Enterprise* reached New Orleans, where the young United States again was battling with the British. General Andrew Jackson commandeered Shreve's boat before Fulton and Livingston could impound it for violating their monopoly. Shreve volunteered to take his supplies past the British guns to Fort St. Phillip, sixty miles down the river. He returned in time to participate personally in the war's final battle—ironically won by Jackson and his forces two weeks after the Treaty of Ghent had officially ended the war.

In 1816, Shreve built the steamboat *G. Washington*, using—or so legend says—timbers from Wheeling's old Fort Henry for the hull. Shreve's design boasted several innovations which made it superior to the Fulton-Livingston boats. In perhaps the most significant change, Shreve substituted fixed horizontal cylinders for the oscillating vertical cylinders Fulton and Livingston had used. This made it possible to place the engine on the deck of the boat rather than in the hold. Thus, Shreve was able to substitute a shallow, flatboatlike hull for the deep keeled hull that had been used previously.

To say that Shreve's *G. Washington* was ill-fated would be an understatement. At Marietta, Ohio, the boat blew a cylinder head. The blast killed several crew members and blew the captain overboard. Shreve climbed back aboard, made the necessary repairs, and proceeded down the river. A few miles below what is now Maysville, Kentucky, the boat stuck on a sandbar and was there for several weeks until a rise in the river floated her free. Then, on arriving in New Orleans, Shreve was arrested and his boat impounded as the result of legal action taken against him by Fulton and Livingston. The resulting case took years to wind its slow way through the court system. By the time it reached the U.S. Supreme Court in 1824, there were at least a hundred steamboats operating on the Ohio and Mississippi. Thus, legalities aside, the court may have been simply bowing to reality when it threw out the Fulton-Livingston patents, declaring "the American waters open to free competition."

Soon there were nearly seven hundred steamboats operating on the Ohio. Beginning in the 1840s, the first steamboat lines came into being.

Organized in 1843, the Pittsburgh and Cincinnati Packet Line was the first to offer regular daily service between those two cities and points in between.

Shreve's contributions were far from over. In 1819, he constructed the *Post Boy*, the first mail boat on the river. In 1824, he built a new version of the *Washington* and incorporated in it a new idea for passenger accommodations. Until then, steamboats had only one large area for passengers—with a partition splitting it into separate sections for men and women. Shreve hit on the idea of using the same type of partitions to create individual cabins, which he then named for the various states of the union. Hence the term *stateroom*. Surely Shreve's greatest contribution to navigation was the invention and construction of his snagboat *Heliopolis*, in 1929. (More about snagboats and the reason for them a bit later.) Finally, Shreve also is remembered for his 1835 founding of the Louisiana town that carries his name—Shreveport.

Century of the Steamboat

Steamboating held many hazards. Experience as a pilot, knowledge of the river, and keeping abreast of shifting sandbars and other hazards was an absolute necessity. Steamboat racing was a popular activity, and more than one foolhardy type decided to coax a bit more speed from his boat by tying down the safety valve of the boiler. When a boiler exploded, as frequently happened, the explosion sent bits and pieces of metal flying in all directions. Those lucky enough to escape being killed or injured by the flying debris often were scalded to death by the steam or burned in the ensuing fire. Steamboat collisions or explosions nearly always resulted in many deaths. After all, a steamboat was basically several floating boilers, each with a steam pressure of hundreds of pounds per square inch, surrounded on three sides by decks and staterooms entirely constructed of wood.

In 1838, attempting to set a speed record for travel between St. Louis and Cincinnati, the captain of a brand-new steamboat, the *Moselle*, used pine knots to make the fire hotter and held down on the safety valves to increase the steam pressure. When the *Moselle* ventured slightly upstream from Cincinnati to pick up other passengers, the captain didn't lower the boiler fires, no doubt intending to pass Cincinnati at full speed. When the boat started back toward the city, however, the boilers exploded, scattering debris—and bodies—over a wide area. Almost 150 people, including the captain, were killed.

On April 27, 1865, in the worst steamboat disaster ever, some 1,450

Union soldiers returning home at the end of the Civil War were killed when the steamboat *Sultana* burst its boilers on the Mississippi River, just a few miles north of Memphis, Tennessee.

Just before midnight on December 4, 1868, the packets *America* and *United States*, sister ships owned by the United States Mail Line Company, collided on the Ohio, near Warsaw, Kentucky. The company's owner, Christopher G. Pearce, had invested nearly a half million dollars in building and outfitting the two elegant boats. That night found the *America* bound out of Louisville for Cincinnati, while the *United States* was heading for Louisville from Cincinnati. A freezing rain was falling when, in a treacherous bend of the river, the *America* rammed into the *United States*. Barrels of coal oil on the deck of the latter caught fire, enveloping the boats in flames and turning the river to one of fire. Both boats sank, although the *United States* was raised and eventually sailed again. The recorded death toll was long listed as 162, although recent research suggests the actual figure may have been less than half that. A federal inspector ruled both pilots were at fault and both lost their licenses.

The worst accident on the upper reaches of the Ohio came on July 4, 1882, when the *Scioto*, a sidewheeler of the Wheeling-Parkersburg Packet Company, set out for Moundsville, West Virginia, with a holiday crowd of 350 people aboard. In midvoyage, it struck the sternwheeler *John Lomas*. Fifty-seven people died.

Despite such hazards, the debut of the Ohio River steamboat, with its dramatic reduction in travel time, removed the last vestiges of doubt from the minds of many potential settlers. No longer was the annual migration to the Ohio Valley counted in the hundreds. The tide of westward settlement now became a flood, and the Ohio River was its high road. In 1810, the combined population of Kentucky, Ohio, Indiana, and Illinois came to fewer than 700,000 people. By 1830, it was more than triple that number—2,131,296. And this doesn't count the many who traveled down the Ohio and then kept going further west or south. The steamboat brought a boom to the towns along the Ohio. Steamboat arrivals at Cincinnati, for example, numbered 360 in 1825, increased to 1,000 in 1829, and multiplied to 4,000 in 1848.

The years from 1830 to 1930 generally are described by most river historians as the "Century of the Steamboat." But clearly the craft's heyday was the twenty-year period from 1845 to the end of the Civil War, during which hundreds of sidewheel packets and, later, sternwheelers carried passengers and freight along the Ohio's 981-mile length from Pittsburgh to Cairo, Illinois, where it meets the mighty Mississippi.

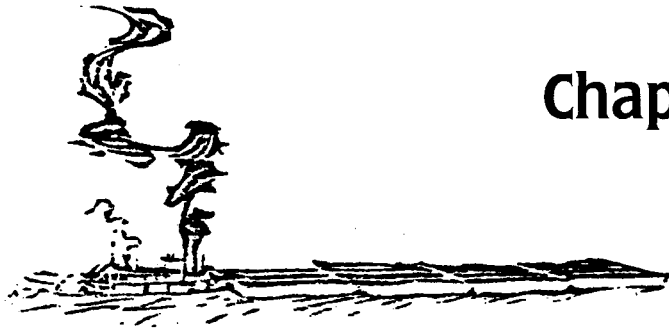
If the steamboat era is what mostly interests you, then you might be well advised to stop reading right here, put this humble volume aside and take up Mark Twain's *Life on the Mississippi*. True, Twain was writing about his experiences on the Mississippi, not the Ohio, but most of what he wrote applied equally well to both rivers, and no one has provided us a better account of those magnificent boats of that long-gone era. "The steamboats," Twain wrote, "were finer than anything on shore. Compared with superior dwelling-houses and first-class hotels in the valley, they were indubitably magnificent . . . they were floating 'palaces'"(277).

Most steamboats were painted gleaming white, with lots of gilt trim and likely touches of red somewhere. Utilitarian and mechanical features invariably were hidden behind lacelike lattice work in a style that would become known as "steamboat gothic." Inside, the staterooms and common rooms were lavish in decor, with more gilt, lots of red plush tapestry, crystal chandeliers, and a blinding array of mirrors. The bar and dining room served only the finest food and drink. Significantly, many of the fancy steamboats that plied the Mississippi were, in fact, built on the Ohio. Among them: that well-known pair, the *Natchez*, constructed by the Cincinnati Marine Railway Company, and the *Robert E. Lee*, constructed by Dowerman and Company of New Albany, Indiana. Captain Thomas P. Leathers of the *Natchez*, was born in Kenton County, Kentucky, on his family's tobacco farm. He personally drew up the plans for the *Natchez*, which he had built in 1869. Captain John Cannon of the *Robert E. Lee* was also a Kentucky native, born near Hawesville in Hancock County. The two were said to be just about the most cantankerous skippers anywhere. And they had something else in common: each hated the very sight of the other.

In 1870 the *Natchez* and the *Robert E. Lee* took part in what may have been the most famous steamboat race ever, one that extended over the 1,274 miles from New Orleans to St. Louis. Thousands crowded the Mississippi riverbank to watch, as telegraph wires spread word the boats were on their way up the river. Gamblers bet prodigious sums, with fortunes won (and lost) on the outcome of the race. The two captains followed dramatically different tactics. Cannon stripped the *Lee* of everything possible and refused to carry any freight in order to save weight. Leathers, apparently more confident, boarded the usual shipments of freight and insisted that the *Natchez* would make no special preparations for the contest. Once the race started, Cannon proved to have a surprise up his sleeve. He had arranged to have a boat with a new supply of fuel waiting in midstream, so that the *Lee*, unlike the *Natchez*, didn't

have to put into shore to refuel. The *Lee* easily beat the *Natchez*, turning in a phenomenal time of three days, eighteen hours, and fourteen minutes—a record then and one that's never been bested since.

In 1949, the diesel towboat *Harry S. Truman* set out from New Orleans in an attempt to break the record set by the *Lee*. The *Truman* came close—at three days, nineteen hours, and thirty-one minutes—but not close enough. Of course, unlike the *Lee*, the *Truman* was shoving a tow of loaded barges.



Chapter 4

Those hardy souls who were the Ohio River's earliest travelers were undismayed by the shoals, rapids, snags (fallen trees), and many other obstructions they encountered on the river. With the advent of the steamboat, however, the risks accompanying river navigation become a matter of great concern, and the frequent delays caused by low water threatened to stifle the river's commercial future. Before the turn of the century, the Ohio was referred to in low-flow periods as being "a mile wide and a foot deep." People could walk across some spots in it during summer dry spells—and hardly get their feet wet in the process. Boats had to tie up along the bank or a dock and wait for a heavy rain or a surge of water from upstream. The needs of a young, growing nation demanded that the Ohio be harnessed and fashioned into a working river. Thus, in 1824, Congress assigned the Corps of Engineers the mission of improving Ohio River navigation, and today that assignment still is one of the Corps' top priorities. In that same year, Congress also authorized the development of specially designed boats and machinery to clear the thousands of snags that clogged the Ohio, threatening to rip out the bottom of any riverboat unlucky enough to hit them. And Congress also approved the dredging of fast-building sediment from the river and the construction of small stone dams at several sites along it, thus deepening the shallow channel.

In 1826, Captain Henry Shreve was appointed federal superintendent of western river improvement, and, as noted earlier, he introduced a snagboat of his own design, the *Heliopolis*, which though it appeared cumbersome and unwieldy, proved to be a great success. The craft had twin hulls placed side by side; the bows of the two were connected at the waterline by a heavy, wedge-shaped "snagbeam," which was the chief weapon against the deeply embedded snags. Using his new boat, Shreve attacked the hull-busting snags which clogged the Ohio. On just one two-mile stretch of the Ohio, enough snags were pulled from the river, cut, stacked, and burned, to equal 1,200 cords of wood.

During the 1830s, Shreve vigorously campaigned the idea that the

federal government should mandate "rules of the road" for steamboat traffic and institute safety inspections for the boats and their boilers. In 1841, with the coming of a new administration in Washington, Shreve found himself in political disfavor and was dismissed from his post. He died in 1851 on his Missouri farm. Thirty years later, Congress belatedly awarded his estate fifty thousand dollars for use of his patented snagboat design.

Although the rapid growth of the nation's railroads diverted much of the cargo the Ohio's steamboats carried in the years before the Civil War, the war nonetheless brought home to official Washington the importance of river navigation and paved the way for the eventual construction of the locks and dams that would turn the Ohio River into the busy commercial artery we know today. In 1863, the war gave birth to the new state of West Virginia, and one of the very first resolutions enacted by the new state's legislature noted the role played by the Ohio in the war and called on Congress to support an "adequate and permanent" improvement of Ohio River navigation.

Congress responded by ordering the Corps of Engineers to survey the Ohio River with an eye to "radical" improvements. W. Milnor Roberts, who was put in charge, journeyed down the Ohio and reported seeing so many snags obstructing the river that he couldn't count them all. But Roberts did tally the wrecked boats and barges he encountered—129 of them. Clearing the postwar river of these obstructions was a major task.

The canalization of the Ohio River got off to a slow start, partly a result of the engineering challenge it represented and partly because of opposition from many rivermen, who tended to think of dams not as improvements but as hindrances to navigation.

As early as 1835, Lieutenant George Dutton expressed the view that only the construction of locks and dams would improve the river for year-round use. The idea was long neglected, however, until it was revived by Roberts in 1870.

In 1864, Major W.E. Merrill—generally looked on as the "father" of Ohio River navigation—recommended the construction of thirteen locks and movable dams between Pittsburgh and Wheeling. He insisted that a system of locks and dams was essential to any plan for improving the upper Ohio to secure a six-foot navigable depth. The following year, he expanded on his idea, arguing the need for such dams throughout the river's length.

Merrill had carried away all class honors at his graduation from West Point in 1859, served with distinction in the Civil War, and spent time in a Confederate prison camp after being wounded and captured while on

a reconnaissance mission. In the immediate postwar period he served as an aide to General William T. Sherman, then was assigned to river and harbor projects at St. Louis and Chicago, where he began his study of waterways engineering.

In 1871, he established what was to become the Cincinnati Engineer District. Merrill sought, and won, authority to construct a new fleet of snagboats, and at his insistence the new boats were built with iron hulls, then a novelty on the river. He also launched a successful campaign for the installation of beacons and buoys to mark river channels. But it was primarily his untiring efforts for canalizing the Ohio that won Merrill a special niche in the river's history.

Eight years in construction, the first federally sponsored lock and dam on the Ohio River was completed on October 7, 1885, at Davis Island, some five miles downstream from Pittsburgh. The lock at Davis Island was 110 feet wide by 600 feet long and was the largest in the world at that time. The dam was a movable type composed of hinged wooden bulkheads, 4 feet wide, that could be lowered to allow traffic to pass over it when the river was of sufficient depth, thus enabling boats to avoid using the lock. The project's cost: $910,000. During its first year of operation, more than fourteen thousand boats and barges passed over the Davis Island Dam and another three hundred or so used the lock.

In 1895, rivermen and shippers organized the Ohio Valley Improvement Association, dedicated to gaining congressional approval for more locks and dams. In the 1890s, a less than enthusiastic Congress authorized the construction of five more locks and dams (Nos. 2 to 6) to canalize the Ohio to the mouth of the Beaver River near the West Virginia-Pennsylvania state line. In 1890, a survey recommended the construction of 12 more (Nos. 7 to 18) to canalize the river to Marietta, and 1901 saw the recommendation of 20 more (Nos. 19 to 38) below Marietta. Finally, in 1910, Congress approved construction of 54 locks and dams required to provide a nine-foot channel from Pittsburgh to Cairo and declared its intention to fund the work at a rate sufficient to complete the system in twelve years—by 1922. In fact, it would be 1929 before the entire network was completed, the delay resulting in part from the demands of World War I and in part by the frequent failure of Congress to appropriate enough money.

To celebrate the 1929 completion of the river's canalization, the Ohio Valley Improvement Association staged a magnificent parade of steamboats that made their majestic way down the Ohio. All along their route, whistles screamed, bells tolled, and cannons blasted a salute. At Huntington—where by now an annual four million tons of coal was being transferred from railcars to river barges—a huge electric sign flashed a

welcome and a band played the state's official song, "The West Virginia Hills." At Cincinnati, President Herbert Hoover was the guest of honor and told an immense crowd he was "proud" to be the president who witnessed the completion of such a mammoth undertaking. But, continued Hoover: "I have the belief that some day new inventions and new pressures of population will require . . . [the river's] further development. In some generations to come, they will perhaps look at our triumph in building a channel nine feet in depth in the same way that we look at our forefathers when, having cleared snags and bars, they announced that a boat drawing two feet of water could pass safely from Pittsburgh to New Orleans."

A New Kind of Dam

Hoover's words indeed were prophetic: the ceremonies of 1929 were both an end and a beginning, for the harnessing of the Ohio River has proved to be a never-ending story. In 1938, less than a decade after the festivities of 1929, a totally new type of dam would be dedicated at Gallipolis.

Previously, the Corps of Engineers had built movable dams based on a design invented in 1852 by a French engineer, Jacques Chanoine, and first used on the Seine River near Paris. Chanoine dams consisted of a masonry foundation level with the river bottom, to which long boards known as wickets were hinged. When the wickets were down, lying flat on the foundation, boats easily passed over them. When the river began to drop, threatening to halt navigation, crewmen at the dam dropped a grapple into the water to catch each wicket and pull it upright. When all the wickets were up, they formed a barrier aptly described by noted river historian Leland R. Johnson in his *Men, Mountains, and Rivers* as "resembling a line of ironing boards on end." The water backed up behind this barrier and formed a pool. When the river was low, boats traveled these slackwater pools and then made their way from pool to pool via locks. When the river began to rise, a trigger was tripped that simultaneously lowered all the wickets, thus again opening the channel.

Wicket dams had been used to "canalize" not only the Ohio but also the Kanawha, but instead of the nine-foot channel provided for the Ohio, the channel on the Kanawha was only six feet deep. From 1924 to 1931, as coal production soared and the chemical industry expanded, yearly barge shipments on the Kanawha increased from 901,000 tons to nearly two million tons. Thus, Congress resolved to modernize the Kanawha navigation system and make its shallow channel compatible with that on the far-deeper Ohio. It authorized the Corps of Engineers to replace

the old worn-out ten-lock system with a series of four new structures—three on the Kanawha and one (Gallipolis) on the Ohio. And when the Corps of Engineers began planning for those new dams on the Kanawha, it rejected the old, wicket-style dams and turned instead to a newer, more sophisticated design—the non-navigable roller-gate dam.

The roller dam was invented by Dr. Max Carstanjen of Mainz, Germany in about 1902. By 1930 there were more than 160 such dams in Europe but none in the United States. The three dams built on the Kanawha—Marmet and London (both completed and dedicated in 1935) and Winfield (1937)—were the first, and that at Gallipolis was for many years the largest roller dam in the world. The roller gate is a steel cylinder set between two concrete dam piers. Circular gears at each end ride on a toothed steel track when being raised or lowered. Each gate, at one end only, is chain-driven by an overhead motor-and-gear hoisting mechanism. The Gallipolis Dam has eight rollers.

Four years in construction, the Gallipolis facility—on the Ohio at Hogsett, West Virginia, 10 miles downstream from Gallipolis, Ohio, and 13.5 miles below the mouth of the Kanawha River—replaced old Locks 24, 25, and 26 on the Ohio as well as Locks 9, 10, and 11 on the Kanawha. A "high-lift" structure, the new dam created a pool that was deep enough and long enough to put those older locks under water.

The Gallipolis Locks and Dam cost $10.6 million to build, with much of the funding coming from the Public Works Administration (PWA), one of the Depression-era work-relief agencies. Into it went 351,000 cubic yards of concrete, 12.5 million pounds of reinforcing steel, 668,000 pounds of steel and iron castings, and 910,000 pounds of miscellaneous metal work. In addition, the job required the excavation of 719,000 cubic yards of earth and another 62,000 yards of solid rock. It included two locks—one 600 feet long, the other 360 feet.

The Gallipolis project was built by the Dravo Corporation of Pittsburgh, which at that time held exclusive U.S. rights to the German-designed gate. Construction began October 23, 1933, and the project was completed exactly four years later to the very day—October 23, 1937. The dam was dedicated June 12, 1938, in ceremonies which attracted more than 3,500 people and saw the gathering of more than a dozen towboats. Gallipolis was termed a "high-lift" dam because that's exactly what it provided—a high lift through a lock for a boat heading upriver. The next few years might have seen the quick construction of other new, high-lift dams on the Ohio had not World War II intervened. A 1935 report to Congress by the secretary of the army outlined a twenty-year plan to replace the Ohio River's small dams with larger, high-lift dams.

The outbreak of World War II put any such plans on hold—and once

again demonstrated the importance of the river to the nation's security. River traffic had grown steadily even during the roughest years of the Depression; the war saw it surge as never before. With the nation's pipelines and railroads working at capacity and oceangoing tankers being torpedoed at sea by enemy submarines, the oil industry turned to the Mississippi and Ohio Rivers for shipping crude oil and refined petroleum products.

Just as the Civil War helped stir interest in construction of the Ohio River's initial navigation system, so World War II underscored the desperate need for that system's modernization. When the Corps of Engineers recommended the river's original navigation system to Congress it was believed that the system would "someday handle 20 million tons of commodities a year." In 1942, the Ohio handled 38 million tons of traffic, much of it essential to the war effort. By 1950, that figure had grown to 42 million tons. And so the postwar era would see a new phase in the taming of the Ohio.

The river modernization program began with construction of the Greenup Locks and Dam at Greenup, Kentucky—Mile 341, some twenty-five miles downstream from Huntington. Dedicated in 1962, Greenup was the model for the other modern high-lift dams that have been constructed on the Ohio in the years since. Whereas one of the older low-lift dams lifted a boat about eight to ten feet, Greenup lifts a boat for thirty feet. The result: fewer dams and much longer pools of slackwater behind each. The Greenup pool stretches to Gallipolis, roughly sixty-two miles. Unlike the rollers at Gallipolis, Greenup and the river's other new dams use tainter gates—named for Wisconsin logger Jeremiah B. Tainter who originally designed them for use in opening and closing dams built for the logging industry. Each of the new dams has two locks—one that is 1,200 feet long and another auxiliary lock that measures 600 feet. The smaller lock can be used when the larger one is under repair, as well as handling boats without tows and pleasure craft.

The new high-lift dams, with their dual-lock chambers, replaced the older wicket dams and single-lock chambers in much the same fashion as today's sleek, diesel-powered towboats replaced the steamboats of yesteryear. Today's Ohio River boasts twenty lock and dam structures, and, thanks to them, going up or down the river is much like going up or down a stairway. Each dam is designed to maintain an upstream "pool" behind it. Lock chambers are integral with the dams. At either end of the lock there are movable gates, one of which is opened to permit a towboat and its attached barges to enter. After a boat and its barges are inside the chamber, the gate is closed and the water level is then lowered and/or raised, depending on which way the tow is going.

But, in an ironic twist, the once-celebrated Gallipolis Dam soon became a real bottleneck for river traffic. The diesel towboats which replaced the old steam-powered paddlewheelers could push strings of barges that dwarfed anything the river pilots of yesteryear ever dreamed of. Accordingly, the river's new, postwar dams, with their 1,200-foot lock chambers, were designed to accommodate easily a tow of barges stretching 1,000 or more feet in length. Not so Gallipolis, with its longest lock chamber measuring only 600 feet in length and the other a scant 360. This meant that, on reaching Gallipolis, a long tow such as the one being pushed upriver by the *Blazer* must be broken into two sections on one side of the dam, with each section locked through individually, then carefully reassembled on the other side. At best, this is a demanding, time-consuming process. The extremes of weather can make it a difficult, even dangerous, piece of business for the hardworking deckhands who must venture out on the barges and do the necessary uncoupling and recoupling of the wire cables that hold the tow together. In summer, reflected heat from the water and all the surrounding steel can raise the temperature on a barge tow by twenty degrees or more. And the July thunderstorm that broke when we arrived at the dam, for all its noise and drama, was no match for what things can be like in February's snow and bitter cold, with the wind-chill factor often way below zero.

From the outset, it was clear that any river modernization would somehow have to tackle the problem presented by the Gallipolis Locks and Dam, but the debate over how best to do so dragged on for years. Finally, after literally years of study and controversy, the Corps of Engineers recommended a solution—the construction of a new canal that would bypass the old locks and dam and, in the process, shave hours off the time that each tow of barges will require to make its way past Gallipolis. Ground was broken for the new canal on November 7, 1987.

The $224 million price tag for the canal—a mammoth project that required the excavation of fourteen million cubic yards of earth and the pouring of 800,000 yards of concrete—was more than twenty times the cost of the original dam, but those in the river industry say it will more than pay for itself by speeding the flow of cargo. (And the industry also notes that it's paying fully half the cost of the project by means of a federal tax on diesel fuel used in commercial vessels.)

Zane Meek, administrative manager of marine services at Ashland Oil, notes that his company alone has been locking something like eighty to ninety thousand barrels of gasoline and other products through the Gallipolis Dam every day—products which originate at the company's Catlettsburg, Kentucky, refinery and is shipped to points upriver. It's not at all unusual, he notes, for a tow of barges to take five or more hours

to complete the process of locking through at Gallipolis. "That amounts to a lot of dollars lying there idle."

With completion of the new canal, it's estimated that barge tows will be able to lock through at Gallipolis in forty-five minutes to an hour. The industry average for the cost of operating a towboat is put at $350 a hour; thus the savings is obvious.

Still to come at Gallipolis: a planned "rehabilitation" of the dam itself, at a cost of approximately $125 million. Included will be replacement of the existing roller gates, the construction of a public access area for visitors and deactivation of the old locks.

City of the Gauls

With the Gallipolis Dam behind us, we're on our way again, and, about twenty minutes or so upstream from the dam, we pass a neat little house and a tree with a homemade sign nailed to it. The sign urges passing boats to blow their whistle. Captain Davis obliges, with the shrill sound echoing out of the water.

The captain speculates that the residents must be older folks who like to keep tabs on the traffic up and down the river. "Guess it beats sitting around listening to your arteries harden," he says.

It was 1940 hours when we locked out of Gallipolis—7:40 P.M. to those of us who are landlubbers—and so now we make our way upriver in the gathering darkness. Here and there can be seen a few houses near the river's banks—their lighted windows and porch lights standing out against the blackness. Sometimes one lone structure. More often clusters of two or three. On the Ohio shore, we pass the Mack River Terminal, the Clipper Mills Dock Company (inactive), and then the little town of Clipper Mills, a string of lighted homes and buildings. Just beyond is Gallipolis.

Gallipolis—or City of the Gauls (French)—surely must have one of the most often mispronounced names of any community in these United States. For the record, it's pronounced by the locals as "Gallup Police." Most are willing to tolerate those outsiders who call it "Gallup Poe Liss," but they have nothing but scorn for those hapless out-of-towners who call it "Galley Opp Oh Less."

The third oldest city in Ohio, Gallipolis was settled by French Royalists fleeing the Revolution there. Actually, the town had its origins in a land speculation scheme. In Paris, the Bastille was razed on July 14, 1789, and the following October saw the palace at Versailles sacked and the king imprisoned. Not surprisingly, many Royalists were anxious to get away and thus were easily suckered by the fast-talking representatives

of the Compagnie du Scioto, which sold them deeds to land in America.

In January of 1790, a company of five hundred adults and children—including many members of the French nobility—set sail for America. On their arrival in Alexandria, Virginia, they learned their deeds were worthless, that the company didn't own the land it had sold them. But all was not lost. The Ohio company agreed to settle the French on some of its own land, and so a construction crew was soon at work felling trees and building a fortified log village on the Ohio, at the present site of Gallipolis. The immigrants arrived on October 19, 1790, unpacked their few treasures from their flatboats and, if local legend can be believed, held a dance that night.

Few of the French were prepared for the harsh life that they found in the new home. Many returned to France, others moved elsewhere. Within two years, half the settlers were gone, and by 1807 only twenty of the original French families remained. But Gallipolis attracted other settlers, from Massachusetts and Virginia, and would grow into a stable, prosperous community.

In 1819, Henry Cushing opened a handsome, three-story tavern, built of brick in the late Georgian or Federal style. In addition to its taproom, dining room, and other usual facilities, the tavern had a large ballroom where social functions were held.

On May 22, 1825, Gallipolis—and Cushing's tavern—welcomed a famous visitor, the Marquis de Lafayette, who was traveling down the Ohio with a party aboard the steamboat *Herald*. On his arrival, Lafayette was escorted to the tavern ballroom, where he was introduced to about one hundred local residents, many of them former citizens of France. In a brief speech to his hosts, as reported in the *Gallia Free Press*, Lafayette "expiated largely upon the disadvantages of slavery and congratulated the French people of Gallipolis, on their location in a land where slavery cannot breathe. He said he loved a people that were jealous of their rights." Then he was escorted back to the boat "by a large concourse of ladies and gentlemen." And, as the *Herald* pulled out from the dock, the people of Gallipolis gave three loud cheers and fired several discharges of cannon.

When the *Blazer* arrives at Gallipolis, no one invites us to come ashore and be entertained. Nor does anyone offer us three cheers. Or fire off a cannon in our honor. We're just another working riverboat, like the countless others that have made their way past Gallipolis over the years.

I slip out of the pilothouse and stand outside for a while, leaning on the rail. I watch as the lights of Gallipolis slip behind us. I let my mind wander and it's not hard to imagine that I'm not in fact aboard the *Blazer* as it pushes a long tow of barges towards Pittsburgh but on the *Herald*

with Lafayette sleeping away in a cabin down below. The river can do that to you. It's so timeless. It was here long before we were. And—who knows?—just might be here long after we're gone.

My reverie is interrupted by the appearance ahead of a bridge, the first since we left Huntington. It's the Silver Memorial Bridge, which connects the small communities of Kanauga, Ohio, and Henderson, West Virginia. The bridge was constructed in record time to replace an ill-fated span which collapsed. For forty years, cars and trucks had rolled across the old Silver Bridge, called that because of its shiny aluminum paint. The bridge carried traffic between Ohio and Point Pleasant on the West Virginia side—until December 15, 1967. About 5:00 P.M. that day, a cold one that saw the temperature hover just around freezing, the bridge, crowded with holiday traffic, collapsed into the icy waters of the Ohio River below. After years of corrosion and neglect, a crucial joint in the bridge's suspension system had snapped. The vibrations of the rush-hour traffic shook the fractured joint apart and the bridge fell, taking dozens of cars and trucks with it. Forty-four bodies were recovered. Two other people were reported missing and are presumed to have died in the collapse. With the bridge out, ferry service provided the only route across the river. But the new bridge, located about a mile downstream from the original span, was dedicated December 15, 1989, exactly two years after the disaster.

A half mile beyond the Silver Memorial Bridge, the Kanawha River joins the Ohio and another half mile beyond that the old New York Central Railroad Bridge crosses the river.

I venture below decks for a late-night snack of apple pie and ice cream. In the adjacent lounge, the off-duty crew members are watching a movie on the VCR.

The lounge is comfortable, if plain. It's furnished with a vinyl couch and chair, a desk, and, of course, the TV and VCR. On one wall is a glass-enclosed bulletin board that displays various company memos. Also on view are a framed photograph of the *Blazer*, a plaque from its builder, and a copy of the story about its christening which appeared in the *Waterways Journal*. On examination, a brass device in the corner turns out to be a brass engine-room telegraph from one of Ashland's old boats, the *Aetna-Louisville*.

The crew enjoys watching movies on the VCR, but their work schedules are such that they seldom get to see anything in one viewing. They catch a few minutes one time and a few minutes more the next, eventually piecing it all together—maybe. Watching the scenery slip by, as I have been doing, long since has lost any novelty it ever had to them.

Especially at night when there's little to see other than a few lights twinkling in the blackness.

A Town That Boats Built and . . .

Venturing back on deck for a last few minutes before turning in, I can see the lights of Point Pleasant, West Virginia, built on the arrowhead of land where the Kanawha meets the Ohio.

This once was Indian territory, and, not surprisingly, the Indians resented the increasing encroachments of the white settlers. Their spark of rebellion was kindled into the flames of all-out war when the entire family of Logan, chief of the Mingos, was murdered. A confederation of tribes went on the warpath, and Virginia's colonial militia was summoned to quell the uprising. Camped at Point Pleasant, on the triangle of land where the two rivers converged, the army awaited the arrival of its rear guard before attacking.

But, as R.E. Banta wrote in *The Ohio*, the Indians "did not wait to be invaded. A large force under the great chief Cornstalk crossed the Ohio during the night . . . and attacked the following morning. This was a desperate and bloody fight, man to man, in frontier fashion, unhampered by European military tradition or protocol. By mid afternoon, it became apparent to the Indians that they could not drive the whites into either of the rivers—their original aim—and toward evening they withdrew across the Ohio" (127-28).

The militia suffered heavy casualties in the fray—some fifty men killed and another hundred wounded. The Indian losses could not be divined, for, as was their custom, they took their dead and wounded with them when they withdrew, a time-honored strategy aimed at keeping the enemy in the dark. However, the Indian losses must have been at least as heavy as those suffered by the colonists, if not heavier, for they soon sent word they were willing to talk peace.

The October 10, 1774, battle essentially broke the power of the Indians in the Ohio Valley. Never again would they be a major threat. Local citizens, arguing that the clash was a prelude to the American Revolution, insist that the Battle of Point Pleasant, not the "Shot Heard 'Round the World" at Lexington, Massachusetts, should be seen as the first battle of the Revolution. That idea has been drummed into the heads of generations of West Virginia schoolchildren as they study state history, but most historians remain unimpressed with that highly questionable proposition.

Whatever its other claims to fame, Point Pleasant has a special niche

in Ohio River history as a busy river town, largely a consequence of its strategic location at the confluence of two rivers. The Corps of Engineers' chartbook shows more than a dozen docks, harbors, and other river-related installations on either the Ohio and on the Kanawha here. A fleeting harbor just above the Kanawha's mouth is the home of Kanawha River Towing, with a fleet of more than a dozen towboats. And two major Cincinnati-based river firms, M/G Transport Services and Hartley Marine Corporation have facilities on the Ohio here.

No longer, however, do boatyards here hum with construction, as was the case for so many years. Local writer Irene B. Brand, writing in the Winter 1990 issue of *Goldenseal*, a lively quarterly that explores West Virginia's history and tradition, aptly described Point Pleasant as "a town that boats built and a town that built boats."

Well before the Civil War, wooden barges and flatboats were being constructed along the banks of the lower Kanawha. Nearby stands of white oak and poplar and the availability of many skilled artisans combined with Point Pleasant's location to make it a natural center for boat construction.

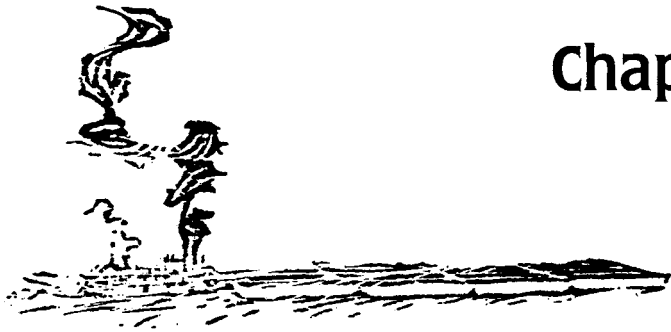
The town's first boat repair dock opened in 1886, a second in 1902, and yet a third in 1909. The Great Depression of the 1930s and the advent of steel-hulled riverboats brought down the curtain on the old boatyards, but modern boatbuilding continued at Point Pleasant at the Marietta Manufacturing Company.

As its name suggests, the company originally was located in Marietta, Ohio, where it was founded in 1899. When, in 1913, one of the Ohio's regular floods badly damaged the Marietta facility, its owners decided against rebuilding in Marietta and moved to Point Pleasant, lured by a group of Point Pleasant businessmen. In the years that followed, Marietta Manufacturing would build all manner of craft—packets, towboats, dredges, derrick boats, and barges—for customers not just on the Ohio and Kanawha but literally around the world.

In World War I, the company built engines, boilers, and other marine items for the war effort. In 1921, it built the steamboats *Cairo* and *Baton Rouge* for the Federal Barge Line. In 1923, it built the *Tom Greene* and *Sailor*. In the 1920s and 1930s, it turned out steamboats and barges for use on the rivers of South America.

In World War II, Marietta Manufacturing employed a small army of workers as it produced hundreds of LSTs, minelayers, subchasers, and minesweepers for the Navy. But after this building binge came a postwar famine, with only occasional orders for barges and towboats such as the *Oliver C. Shearer*, a 4,000-horsepower craft built in 1960. In 1962,

the shipyard built two 800-ton hydrographic research ships, the *Pierce* and the *Whiting*, for the U.S. Coast and Geodetic Survey. But such contracts were too few to keep the company going, and in 1970 it was forced to shut its doors, writing an end to more than one hundred years of river history.



Chapter 5

On November 20, 1886, the *Huntington Advertiser Weekly* headlined the news on its front page that on the previous night the young West Virginia city—founded in 1871, it was only in its second decade—had for the first time been illuminated by electric lights. The newspaper described that dark, wet Friday night when pedestrians who had, until that moment, been picking their way over black and hazardous streets, hailed with joy the sudden brilliant flash "from 15 globes of electric fire."

The *Advertiser* went on to say: "With electric lights and water works assured and the finest opera house in the state, all we need to rival New York in dignity and importance is an elevated railway and a boodle alderman."

It was only four years earlier, in 1882, that legendary inventor Thomas Edison built the first commercial electric station in New York. In a short time, electric plants sprang up all over the country—Huntington being no exception. Though it seems strange to us today, after the initial spurt of public interest in electricity, people were slow to take to this new way of doing things. Why? Because there were none of the labor-saving electric appliances that today all of use routinely. Consider this hard-to-believe-but-nonetheless-true piece of trivia: electricity arrived in the city of Roanoke, Virginia, in 1888, but in 1903—that was fifteen years later—the city had exactly thirty-six residential customers.

Today, electricity is something all of us take for granted every day—from the time we throw back the covers, flick on our bedside light, and head for the kitchen to plug in the pot for that morning cup of coffee. "Globes of electric fire" light our homes and streets. Electricity heats and cools our homes, cooks our food, and entertains us via radio or audio tape, television or video recorder. In the world of business, electricity runs elevators and cash registers and, of course, computers. In industry, electricity melts steel, shapes it, cuts it, and welds it back together again. It saws wood, prints books, dries paint, stitches clothes, and performs a thousand and one other tasks.

And today, just as in the Huntington of 1886, most of that electricity comes from coal. When you flick an electric switch or plug in an appliance, you are actually causing coal to burn. "Coal by wire," as it's sometimes been described. A modern power plant burns thousands of tons of coal each day—and, not surprisingly, in the Ohio Valley much of that coal is delivered by river.

Coal has been shipped down the Ohio River for roughly two hundred years. In 1793, the Army Quartermaster Department sent a fleet of rude barges loaded with coal down the Ohio to supply the garrisons at various forts along the river. By the early 1800s, commercial shipments had begun. The boats that carried the coal were hammered together in a careless fashion and generally were sold along with the coal when the shipment reached its destination. They were steered with long oars, in much the same fashion as the traditional flatboats they resembled.

The *Condor* is credited by most river historians with being the first Ohio River steamboat to push a tow of loaded coalboats down the river. That was in 1836. But it wasn't until after the Civil War that steamboats and barges became the generally accepted method of shipping coal.

In 1866, when W. Milnor Roberts was appointed superintendent of navigation on the Ohio, he undertook a survey of the river and the traffic on it. Roberts found that total coal shipments that year from Pittsburgh, Wheeling, the Kanawha River, Pomeroy, the Big Sandy River, Hanging Rock, and Ashland came to forty million bushels. And Roberts counted at least ninety steam towboats engaged in the coal towing business.

The Story of Coal

Most people think coal is a mineral. It isn't. It's an organic compound formed from the remains of living trees, shrubs, and plants that flourished millions of years ago during periods of uniformly mild and moist climate. In effect, it is fossilized plant material. There are four primary types of coal—anthracitic, bituminous, sub-bituminous and lignitic—each with different characteristics, determined by the nature of the original plant debris in which they originated and the geologic conditions that prevailed when they were formed.

During the Mississippian and Pennsylvania geological epochs—some 300 million years ago, give or take a few years—a warm and humid climate favored the growth of huge tropical seed ferns and giant non-flowering trees and created the vast swamp areas which comprise the coal beds of today. (The Everglades in Florida provide the closest modern-day equivalent of the kind of swamp area that we're talking about.)

When the plants died and fell into the boggy waters, they partially decomposed but did not rot away. Instead, the vegetation was changed into a slimy material called peat. The sea advanced and withdrew over these deposits and new sediments were laid down. Under pressure, the peat dried and hardened to become low-grade coal or lignite. Further time and pressure created bituminous coal. Tremendous pressure would compress a thickness of twenty feet of the original plant material into a one-foot-thick seam of coal. Even more pressure, a result of the folding of the earth's surface into great mountain ranges, produced the highest grade coal, anthracite.

The Chinese are said to have mined and used coal as long ago as 100 B.C., and it's thought that coal was known to the Greeks and Romans. The first documented proof that coal was mined in Europe was provided by the monk Reinier of Liege, who, writing in about the year 1200, told of "black earth very similar to charcoal" in use by metalworkers. Large-scale mining in Europe and Great Britain dates from the mid-sixteenth century.

In this country, the earliest recorded coal mining operations were begun in 1701 on the James River in Virginia, and in 1770 George Washington commented on an Ohio coal mine that he had seen. Up until the American Revolution, however, most coal used in the American colonies came from England or Nova Scotia. It was wartime shortages of coal during the colonies' fight for independence that spurred the growth of the young nation's domestic mining operations.

By the early 1830s, many small mining companies had sprung up along the Ohio, Illinois, and Mississippi rivers and in the Appalachian region. In the 1840s, the U.S. coal industry mined its first one million tons, and from then on growth was steady. Initially, much of that coal was used within a few miles of where it was dug. The salt industry which developed in the Kanawha Valley of what was then western Virginia provides a good example.

The Indians knew how to boil brine to produce salt and for centuries had frequented the salt springs of the Kanawha Valley. In 1797, Elisha Brooks leased the Malden area salt marshes from Joseph Ruffner and there erected the valley's first commercial saltworks. When Ruffner died in 1802, his sons, David and Joseph, inherited the salt property. They sank deeper wells and undertook other improvements, increasing their production nearly tenfold. Others followed their lead and by 1815 the banks of the Kanawha River were lined with more than 50 salt furnaces that yielded between 2,500 and 3,000 bushels of salt a day.

The Ruffner brothers made a historic decision when they decided to abandon wood and turn to coal instead to fire their salt furnaces. One

reason behind the switch was that the surrounding countryside for miles around had been stripped of trees by woodcutters gathering fuel for the furnaces. The success of the Ruffners in burning coal soon prompted all the valley's other salt makers to follow their lead. By 1846, the Kanawha salt furnaces were burning six million bushels of coal a year, most of it coming from small mines located on the Kanawha, twenty miles or so above the saltworks.

The coal was sent down the river from the mines to the saltworks by flatboat. But little of the coal was sent to markets farther down the river because the Kanawha was usually so low in the summer and fall months that boats could only travel it during the spring and winter.

Improving the Kanawha

In the Virginia of that day, it long had been a dream to link the James and Kanawha Rivers—a feat eventually accomplished by the tracks of Collis P. Huntington's Chesapeake and Ohio Railway. As early as 1812, a commission headed by John Marshall recommended construction of a road, along with canals that would bypass the falls on both the New and Kanawha Rivers.

In 1819, a team of engineers inspected the Kanawha and recommended its improvement. By 1826, the state had completed the James and Kanawha Turnpike from Dunlap to the falls of the Kanawha, and three years later money was appropriated to extend the road to the mouth of the Big Sandy by way of Charleston. By 1830, more than ninety thousand dollars had been spent dredging Kanawha sandbars and clearing the channel. Soon steamboats joined the flatboats and keelboats making their way up and down the Kanawha. In 1841, Charleston welcomed 104 steamboats, and in 1842 that number had increased to 156.

The Civil War put a temporary halt to any efforts to improve the river. At the war's end, the new state of West Virginia and the federal government both turned their attention to the project. The Kanawha Valley salt industry had long since reached its zenith, but railroads, steamboats, and factories were creating a growing market for the valley's coal.

In *Men, Mountains, and Rivers,* Leland R. Johnson relates what happened when a delegation of VIPs, led by Chief of Engineers Andrew A. Humphreys, made a personal visit to inspect the situation:

> [the group] traveled up the Kanawha on May 18, 1875, aboard the steamboat *Clara Scott,* to Charleston to examine the river and inspect General [William P.] Craighill's plans for the Kanawha. At Charleston, a gala dinner was held for the board at the Hale House hotel, with Dr. John P. Hale

> [the hotel's owner and a prominent local businessman] presiding. Hale spoke to the group, predicting that good times for the Kanawha Valley were at hand, when slack water navigation would "unlock the vast mineral treasures of our hills." General Humphreys afterwards began a round of toasts: Humphreys toasted the Corps of Engineers, Craighill toasted the Kanawha River, U.S. Senator Henry G. Davis of West Virginia toasted the Windom Committee... and so on into the early morning hours. "Thank God, we have found one river improvement that has merit in it!" said one Congressman, and this was the sentiment of all present. The survivors staggered to their rooms for a few hours sleep, and in the morning they boarded a train to return to Washington and report favorably to Congress. It was fortunate they took the train, for the Captain of the *Clara Scott* sank her in seven feet of water on the trip downriver. [84-85]

The delegation so warmly toasted by Senator Davis was a select committee of the U.S. Senate, chaired by Senator William Windom of Minnesota, which, after studying the nation's waterways transportation needs, recommended a sweeping program of improvements, including the canalization of both the Ohio and Kanawha Rivers. Congress approved the Kanawha River project and the construction of Davis Island Dam on the Ohio in 1875, and the first two locks and dams on the Kanawha were under construction by the end of the year. Lock and Dam 4 at Cabin Creek and 5 at Brownstown were chosen for early construction because they linked Charleston with the coal mines; there were no mines above the pool of Dam 4.

Original plans for improving the Kanawha called for the construction of 12 locks and dams, but Nos. 1 and 12 eventually were deemed not needed so only 10 were built. The last of these, Lock and Dam 11, was completed on October 11, 1898, making the Kanawha the first of the nation's rivers to be completely canalized with wicket dams. The project had taken twenty-three years to complete but—thanks in large measure to the elimination of two of the 12 dams—had come in $100,000 under budget.

To say that the canalization of the Kanawha River was a boon to the valley's coal industry would be a dramatic understatement. When work on the project started in 1875, the three coal mines in the valley shipped 161,932 tons of coal. By 1898, the valley boasted seventy coal mines that employed 9,000 men and shipped more than a million tons of coal down the Kanawha. Johnson notes that the Kanawha's were "the lowest freight rates in the United States" (90).

The wicket locks and dams on the Kanawha would serve the valley's river needs for many years, but by the 1920s some would be forty years old and badly in need of repair. After the inevitable years of study—the

slow pace of government projects is not a contemporary phenomenon—a decision was made that, instead of revamping the old dams, it would be cheaper to build entirely new ones, and so contracts were let for the construction of roller dams at Marmet and London, 67.8 and 82.8 miles respectively above the mouth of the Kanawha. Then, in 1933, Congress approved the construction of the Winfield Locks and Dam on the Kanawha thirty-one miles above its mouth and the Gallipolis Locks and Dam on the Ohio. (We've already discussed the modernization of the Gallipolis Dam, and we'll turn our attention to the upgrading of Winfield later in these pages.) The Marmet and London projects were completed and placed in service in 1934, Winfield in 1937 and Gallipolis in 1938. The work, which resulted in a nine-foot channel, had cost $23.6 million.

In 1990, the Kanawha River carried 21 million tons of traffic, including petroleum products, shipments to and from the valley's chemical plants and, of course, coal.

The Ohio—AEP's Supply Line

Much of the coal that's carried on the Kanawha is destined for the power plants of the American Electric Power system. One of the nation's largest electric utilities, AEP serves the energy needs of 7 million people in portions of Michigan, Indiana, Ohio, West Virginia, Virginia, Kentucky, and Tennessee. It operates in 3,200 communities, spread over a service area of more than 45,500 square miles. It operates twenty-two power plants. Of these, one is a nuclear plant (Donald C. Cook in Michigan), one is a pumped-storage facility (Smith Mountain in Virginia), and twenty are coal-fired plants, many of them located on the Ohio and Kanawha Rivers. Ninety percent of the eleven billion kilowatts of electricity that AEP produces every year comes from coal. Much of that coal is delivered by barge, some by AEP's own fleet of towboats and barges, some by other companies operating under contract.

A paragraph from an AEP publication profiling its River Transportation Division bluntly states the case for delivering coal by boat and barge: "Why move coal by river? Simply because it's the most economical type of transportation available. Railroad haulage is significantly more expensive because of numerous rate increases by the various rail carriers. Truck haulage is even more expensive, due to the tremendous jump in oil prices in the past twenty years, as well as the expense of maintaining a fleet of trucks."

River transportation of coal—or other bulk cargoes—also offers considerable ease and convenience because of the large quantities that can be moved in a single tow.

An AEP towboat typically pushes fifteen jumbo barges, each of which is capable of holding 1,500 tons of coal. Fifteen such barges, therefore, can haul 22,500 tons of coal. By way of comparison, it would take 225 railcars—each with a capacity of 100 tons—to haul 22,500 tons. That would be equal to two unit trains, which usually are comprised of about 110 railcars. And it would take 900 trucks—assuming that each could carry 25 tons—to carry that same amount of coal.

With its fleet of fourteen towboats and nearly five hundred barges, AEP's River Transportation Division moves more than twenty million tons of coal annually to AEP System generating plants on the Ohio and Kanawha Rivers. In fact, the electric utility's own boats and barges move more than 40 percent of the coal consumed by AEP's generating plants.

Operating from its headquarters at Lakin, West Virginia, the AEP fleet travels the Ohio from the Cardinal Generating station at Brilliant, Ohio, near Stubenville, down to Metropolis, Illinois, where the utility operates the giant Cook Coal Terminal. Nearly half of the total tonnage moved by AEP's boats and barges is transported from the Cook Coal Terminal to the Rockport generating station at Rockport, Indiana.

Completed in 1976, the Cook Coal Terminal handles—"transloads" is the technical term—approximately 10 million tons of coal per year. Served by three railroads, Burlington Northern, Missouri Pacific, and Illinois Central, the terminal links the coalfields of Colorado, Utah, Wyoming, Montana, and Illinois with AEP's generating plants. Much of the coal arrives at the terminal via long unit trains hauled by the Burlington Northern from the Powder River Basin in Wyoming. The railcars are equipped with special swivel couplers which allow them to be turned upside down and dumped without uncoupling the entire train. The terminal can unload a hundred-ton railcar in less than two minutes and can then load that coal onto barges at a rate of four thousand tons per hour. It can load a tow of fifteen jumbo barges—including the time needed for maneuvering the barges—in one eight-hour shift. If necessary, the terminal has room to store up to a half million tons of coal.

AEP's River Division was established in 1973 when Indiana Michigan Power Company—one of eight electric operating companies within the AEP system—purchased O.F. Shearer and Sons, a commercial barge line which had its base of operations at Cedar Grove, West Virginia.

At that time, Shearer was handling approximately 90 percent of AEP's coal movements on the Ohio, Kanawha, and Green Rivers. The ties between Shearer and AEP date back to the early 1950s, when the barge line began transporting coal to the newly constructed Tanners Creek and Philip Sporn generating plants.

The River Division was dramatically expanded in 1976-77 with the

purchase of sixteen new towboats—5,600-horsepower vessels built by Dravo Corporation and by St. Louis Ship.

In February of 1977, the division moved its headquarters from Cedar Grove to Lakin. There the utility operates two drydocks for repairing and maintaining its boats and barges, along with a machine shop for overhauling engine components, a storeroom, and the division's business offices. The division is a major economic factor in the Mason County, West Virginia, area. Many of the division's employees live in the area, and, in addition, the division spends millions of dollars every year in the purchase of diesel fuel for its boats, food for their crews, and other needed supplies.

The AEP River Transportation Division is one element within the AEP system's Fuel Supply operation. The Fuel Supply Department, which is headquartered in Lancaster, Ohio, manages AEP's affiliated coal mining operations, purchases coal from nonaffiliated sources through the negotiation of contracts, and coordinates the delivery of that coal to AEP generating plants. In many instances, the transportation of coal from the mine to the power plant involves both rail and river transportation. AEP staffers in Lancaster are responsible for making certain that railcars, once they reach the river terminal, don't have to wait for barges, and that towboats, once they reach a rail point, don't have to wait for railcars. While the overall coordination of rail and river shipments comes from the Lancaster office, the River Division has dispatchers on duty at Lakin who keep in constant contact with each of the AEP boats on the river.

A typical chore for one of AEP's towboats might see it pick up a string of ten loaded barges at AEP's Putnam Coal Terminal—located on the Kanawha in the shadow of the system's largest power plant, the 2,900-megawatt John E. Amos—then push those on down the Kanawha to the Ohio, then up the Ohio to the Mountaineer and Sporn plants. At the Mountaineer plant, it might drop off six, push the remaining four on to the Sporn, then pick up a set of empties to return to the Putnam Coal Terminal.

The Kyger Creek Power Plant

Two miles upstream from Point Pleasant, on the Ohio bank, we pass the giant Kyger Creek Power Plant, one of many coal-fired power plants the *Blazer* will encounter as we make our way upriver. But, unlike the other power plants we will see, which generate power for millions of customers, Kyger Creek was built with only one customer in mind—Uncle Sam.

In 1952, when the former U.S. Atomic Energy Commission (now part of the Department of Energy) decided to build a uranium enrichment

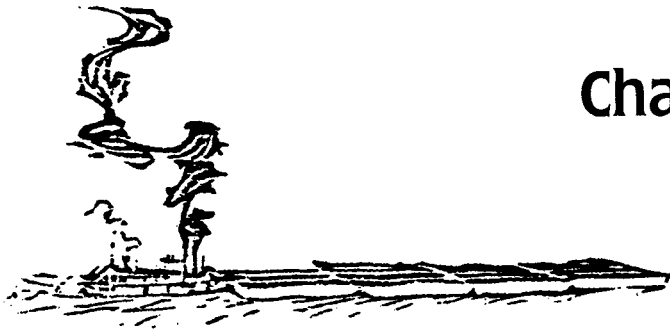
plant in Pike County in southern Ohio, the AEC needed a tremendous amount of electric power for the new plant. Fifteen private electric companies agreed to join forces to form a new company, the Ohio Valley Electric Corporation, and undertook to build two new power plants—both on the Ohio River but almost two hundred miles apart—and a 330,000-volt transmission system to deliver the power to the AEC project.

Groundbreaking for both plants—that at Kyger Creek and the Clifty Creek Plant at Madison, Indiana—took place in December 1952. Barely more than two years later, in February of 1955, the first 215,000-kilowatt generating unit at each of the two plants was placed in operation. Meanwhile, construction continued on the remaining units. At the peak of construction, an army of 3,000 workers was on the job at Clifty Creek and another 2,400 at Kyger Creek. By December 1955, the fifth and final unit of the 1,075,000-kilowatt Kyger Creek Plant was completed. And by the following March, the sixth and final unit of the 1,290,000-kilowatt Clifty Creek Plant was finished.

Construction of the two plants, along with the necessary transmission system, cost $385 million. Together, they eventually supplied the AEC with as much as 17 billion kilowatts of electricity a year—more electric power than most states use in a year's time. Later, when production at the AEC facility was scaled back, the two power plants started selling electricity for private use.

When operating at their peak output, Clifty Creek and Kyger Creek burn 7.5 million tons of coal a year—all of it delivered to the two plants' unloading docks via Ohio River barges. The first barge was unloaded at Clifty Creek on October 27, 1954, and the first at Kyger Creek six days later.

Less than a mile upstream from Kyger Creek, again on the Ohio side of the river, is American Electric Power's General James M. Gavin power plant, a 2,600-megawatt facility. Just beyond it lies the little Ohio town of Cheshire (pop. 250).



Chapter 6

On Sunday, I'm up early—even before the polite tap on my cabin door. Again I ponder the question of shaving and again I decide I won't. Hey, I'm on vacation. What's the point of being on vacation if you can't kick back and relax a bit? Shaving is too much like going to the office.

After a quick breakfast, I head for the pilothouse, where Captain Davis has just relieved Ronnie Burge.

"Well, what do you say now?" the captain asks me as I enter.

I check the logbook to see what progress we made overnight and find we've made considerable headway. Overnight, we churned past the Ohio towns of Middleport and Pomeroy and the West Virginia communities of Mason, Hartford, and New Haven. Just beyond New Haven we passed American Electric's Phillip Sporn plant, then locked through the Racine Locks and Dam.

At Racine, American Electric operates one of Ohio's few hydroelectric stations. Built between 1977 and 1988, it was costly to build—$100 million for a relatively small generating capacity of forty-eight megawatts. Per megawatt, that's four and a half times as much as it costs to build a typical coal-fired power plant. But it costs only a fifth as much to run and produces no pollutants.

Once the *Blazer* locked through at Racine, it was a quick and uneventful thirty miles or so to the Belleville Locks and Dam, which we're now approaching. Along the way we passed the West Virginia town of Ravenswood.

Until the early 1950s, Ravenswood was a quiet little place, perhaps best known for the Ravenswood House, a popular country inn that attracted lots of summer guests from Parkersburg, some forty-five miles away. In the fall, farmers brought their livestock to Ravenswood to be sold, said to be the busiest market between here and Pittsburgh. But in 1954 that quiet was forever shattered when Kaiser Aluminum and Chemical Corporation came to town. Kaiser studied seventy-six sites in virtu-

ally every corner of the country, looking for the perfect spot to locate a new aluminum plant it was planning. The company was looking for a site that offered a plentiful supply of water, affordable electric rates, mild year-round weather, a capable workforce, and convenient access to markets and raw materials by rail, road, and, yes, river. Those conducting the search found what they were looking for at Ravenswood.

Kaiser Aluminum—one of the family of companies founded by famed industrialist Henry J. Kaiser—bought three thousand acres on the river just south of town and in 1955 began construction of what would become the world's largest aluminum plant. At one point, the $200 million plant employed nearly three thousand workers and produced more than 750,000 pounds of aluminum a day.

The plant transformed once-sleepy Jackson County into the fastest-growing county in the state. But the boom was to prove all too short. Worldwide problems in the aluminum industry combined with corporate woes encountered by Kaiser prompted the company to sell the big plant. Today, the plant's new owner, Ravenswood Aluminum, is struggling to stay afloat. The workforce is down to 1,500, and the plant, the scene of a bitter eighteen-month strike in 1991-92, faces an uncertain future. Plant officials say they are simply trying to hold on until the worldwide price of aluminum goes back up.

Shortly after I settle into the pilothouse for the morning, the *Blazer* arrives at Belleville. As we near the dam, a shrill, high-pitched whistle blows, signaling that we have permission to enter the lock.

Racine is forty-two miles upstream from the Gallipolis Locks and Dam, and Belleville is thirty-four miles upstream from Racine. They were built at the same time, with Belleville completed for operation in 1969 and Racine in 1970. Racine cost $65.9 million. Belleville was slightly cheaper, at $62.2 million. Observation platforms and picnic facilities have been built at both dams and provide curious souls with a good spot to watch the towboats and their barges lock through.

Because Belleville—like Racine and all the new locks and dams on the river—has a 1,200-lock chamber, we don't have to go through the same time-consuming procedures we had to perform at Gallipolis, breaking the tow into two sections, locking each through individually, and then reassembling them on the other side. And, because there's no other boat ahead of us, we can move right into the lock.

It's still dark when the lock gates close behind us. Dozens of flying insects of some sort clutter the windows of the pilothouse. "Sometimes they get so bad, we have to take the fire hose to 'em and wash 'em off," the captain says.

Once we're inside, the hands throw thick ropes onto floating mooring pins built into the lock wall. The pins hold the barges close to the wall while water fills the lock. That way the barges don't swing back and forth, banging against the wall. The mooring pins float upwards with the water level in the lock. The lock fills quickly.

The upper lock gates ease open, and the deckhands untie the barges from the mooring bits. Once the gates open fully, they retract into recesses in the walls. The whistle blows and we push our way out. The whole process has taken only thirty minutes or so—a remarkable contrast to the situation at Gallipolis and a perfect illustration of why rivermen view Gallipolis as such a bottleneck.

During the brief time it takes us to lock through, the sun manages to make its morning appearance. The sensation is an odd one. It was dark on the downriver side of the dam, but here on the upriver side it's broad daylight. Or so it seems.

Islands in the Stream

Eight miles upstream from Belleville, we come on Mustapha Island, one of the largest of the many islands found in the Ohio.

Islands are something we generally associate with the ocean—and especially sunny climes like the Caribbean and the South Pacific—but they also are common in rivers. As recently as the turn of the century, the Ohio contained hundreds of them, but over the years many were lost to dredging. Those that remain provide nesting spots for blue herons and other waterfowl and are home to beaver, mink, muskrat, and deer. To protect those animal residents, more than two dozen islands—totalling 3,500 acres—have been designated by the federal government as the Ohio River Islands National Wildlife Refuge. Creation of the refuge was a joint public-private effort, involving the U.S. Fish and Wildlife Service, the Nature Conservancy, Ducks Unlimited, and a number of private companies, including Ashland Oil.

Rich in biological significance, the islands represent a mosaic of bottomland hardwoods, wetlands, and various life-forms rare to the area. They also serve as home to migratory birds such as the black duck and the king rail, as well as to the endangered pink musket mussel.

The prime mover in obtaining federal approval—and funding—for the Ohio River Islands Refuge was West Virginia's U.S. Senator Robert C. Byrd. For many years, notes Byrd, "these islands were considered obstacles, nothing more than mounds in the river. But these islands supported many other life-forms before man arrived here. By setting them

aside now, birds, animals, fish, and other water creatures will be able to flourish and use those islands much as their ancestors did thousands of years ago."

Two miles upstream is another island, Newberry by name. As I did when we passed Mustapha, I search carefully with my binoculars, hoping for a glimpse of a blue heron. But my search is in vain. Once common on the Ohio, the blue herons had all but vanished but now are staging a welcome comeback.

An adult blue heron will have a wing span of five or even six feet. Young blue herons, who hatch from chicken-sized eggs, require massive amounts of fish. Thus, blue herons nesting sites are always located near an abundant source of fish and shellfish. Industrialization and virtually unregulated pollution in the first half of this century lowered the Ohio's water quality and fish population dramatically. But today, thanks to the antipollution efforts of recent years, the river is cleaner—and the blue herons are coming back.

A few miles more and we come to a large hourglass-shaped island that surely must be the best known of the Ohio's many islands. Blennerhassett, it's called. A strange name. But stranger still is the story behind it—a saga that would do credit to a paperback romance novel and that even today, nearly two hundred years later, lures thousands of curious visitors to the island each year.

The 500-acre island, once home to prehistoric tribes and later the site of a Shawnee village, is owned by E.I. du Pont deNemours and Company. DuPont makes Teflon and other products at a nearby Parkersburg plant. The island is under long-term lease to the state of West Virginia, which has transformed it into a handsome park dedicated to keeping alive the Blennerhassett story—and attracting tourist dollars. The park's centerpiece: an authentic reconstruction of the impressive mansion where, nearly two hundred years ago, the Blennerhassett drama unfolded. Born in 1764, Harman Blennerhassett was a member of a distinguished family that traced its roots back to England's King John. He might have spent his life as a prosperous country squire—playing cards, riding to the hounds, and managing the family's 5,000-acre estate in Ireland's County Kerry. But Harman, who inherited an immense fortune on his father's death in 1792, proceeded to kick over the traces. He committed treason (in English eyes at least) by joining the Society of United Irishmen, a secret organization dedicated to freeing Ireland from English rule, and in 1794 he scandalized his family and friends by marrying his beautiful young niece Margaret. Determined to put their political and personal problems behind them, Harman and Margaret fled Ireland and, accompanied by a retinue of servants, sailed for America. They first visited

New York, then Philadelphia, and spent the winter of 1796-97 in Pittsburgh. In the spring, they set off down the Ohio. Romantically, the two had decided to make their new home in America's Far West—then the Ohio Valley.

And so, in 1798, they landed on a nameless patch of land in the Ohio that would become known as Blennerhassett Island. The couple immediately fell in love with the island and purchased two hundred acres on its upstream end. There they lived in an abandoned log blockhouse for three years while they supervised the construction of a handsome house like nothing else for miles around, a magnificent mansion in the wilderness. Constructed in the shape of a horseshoe, the large white structure had the main living quarters in the middle portion, a kitchen and servants' quarters in one wing and Harman's library, office, and chemical laboratory in the other. The home's furnishing were lavish—the floors were covered with Oriental carpets, the fireplaces carved from marble, and the doorknobs fashioned of silver. Fine paintings, prints, and elaborate mirrors graced the walls. The house is said to have cost the then-unheard-of sum of sixty thousand dollars.

Surrounded by extensive lawns, ornamental shrubbery, and gardens, the two lovers had created an island paradise. But their idyll was to be brief. For in 1806, the Blennerhassetts welcomed to the island a visitor who would prove to be the serpent in their Garden of Eden—Aaron Burr.

One of the tragedies of American history was the death of Alexander Hamilton, killed by Burr in a duel. Embittered by the adverse public reaction, Burr planned a gigantic treason. With a secret army he would conquer Mexico, and then, using it as a base, he would take over all the land west of the Alleghenies. It was a massive scheme and would require vast sums of money. Hearing of the Blennerhassetts, Burr arranged to visit their island paradise and there he convinced the gullible Harman to join his cause.

But by this time word of Burr's plot had reached President Thomas Jefferson, who ordered the arrest of both Burr and Blennerhassett. When members of the Virginia militia arrived on the island, ready to take Harman into custody, he already had set off down the Ohio to join Burr. The soldiers briefly detained Margaret but then told her she could leave, so she quickly loaded what items she could on a flatboat and set off down the river. Surely she must have looked back and wondered when she would return to her beloved island. In fact, neither she nor her husband ever would see it again. The title to the island eventually went to Harman's creditors, and in 1811 a fire—started when a drunken servant dropped a candle—burned the wooden mansion to the ground.

Eventually arrested, Harman was thrown in prison and languished there for weeks until Margaret successfully begged his release. When finally brought to trial, he—like Burr—was acquitted. Though the evidence was clear that the two had planned treason, the plot had been nipped in the bud before they had time to commit any treasonable overt acts. But the experience left Harman a beaten, broken man. After an ill-fated attempt at running a cotton plantation in Mississippi, he and Margaret went to England. Harman, by then all but penniless, died on the island of Guernsey, off the cost of France, in 1831. Margaret died eleven years later in New York City.

After its brief brush with history, Blennerhassett Island led a sleepy existence. It was divided into farms and in the 1890s and early 1900s was the site of a small amusement park, sometimes used for sporting events. Gentleman Jim Corbett, the heavyweight champion from 1892 to 1897, is said to have boxed on the island, and the Cincinnati Reds and other early baseball teams played there. As early as the 1920s, there were calls for making the island a state park and reconstructing the mansion. But it was to be the mid-1970s before that dream became a reality. Today small sternwheelers pick up visitors in nearby Parkersburg, West Virginia, and carry them out to the island, where they can visit the reconstructed mansion. The trip takes about twenty minutes.

Georgian in style, the recreated mansion is an impressive structure even today and surely was even more so when the original was built in a wilderness where most homes were crude log cabins.

Only the barest glimpse of the mansion can be seen through the trees as the *Blazer* passes by.

I ask Captain Davis if he's ever visited Blennerhassett Island. He says no, he hasn't. It must be a bit like the people who live on Staten Island and take the famed Staten Island Ferry to their jobs in Manhattan every day. Each trip takes them right by the Statue of Liberty. But few ever actually visit the statue.

Leaving Blennerhassett behind, we quickly come to Parkersburg, where we negotiate our way through three bridges—first the Parkerburg-Belpre Highway Bridge and the Baltimore and Ohio Railroad Bridge, which are side by side, then another, newer highway bridge, located a mile or so upriver.

Keeping Out the Angry Waters

At Parkersburg, the most visible landmark from the river is a long, low concrete wall that encircles the town, much like the stone walls around the castles built in Europe in the Middle Ages. But, whereas castle walls

were erected to protect those inside from armed attackers, the walls that encircle Parkersburg and other Ohio River towns are intended to keep out the angry river when it goes on one of its periodic rampages, sending floodwaters sweeping down the Ohio Valley.

The first record of serious floods on the Ohio is contained in a letter written by Colonel Henry Bouquet, the English commandant of Fort Pitt, now Pittsburgh, which describes some of the earlier Ohio River floods. The flood of 1763 apparently attained a stage of about forty-one feet on what is now Pittsburgh, this having been determined from marks on what's left of the old blockhouse there. There's also a legend about a giant flood in 1772-73, although experts have never found any proof it took place.

Nonetheless, floods were a familiar threat on the Ohio. In his *The Ohio River Handbook and Picture Album,* editor Benjamin F. Klein quoted this 1820 comment from the pen of naturalist John James Audubon: "When it happens that, during a severe winter, the Allegheny Mountains have been covered with snow to the depth of several feet, and the accumulated mass has remained unmelted for a length of time, the materials of a flood are thus prepared. . . . On such occasions, the Ohio . . . presents a splendid, and at the same time appalling, spectacle. But when its water mingle with those of the Mississippi, then is the time to view an American flood in all its astonishing magnificence" (342)

The early settlers were drawn to the valley by the rich soil and forests that covered it. But by the 1880s, the farmer's plow and the woodman's axe had removed much of that protective covering. Then, in 1884, the Ohio washed the unprotected rich soil downstream in a great flood. Some two thousand homes floated down the Ohio on the crest of the 1884 flood. Although it hardly seems a laughing matter, rivermen joke about the firehouse in Marietta, Ohio, that was swept away, fire engine and all, by the flood and, six days and many miles later, "turned up as part of the Louisville Fire Department." Prodded by frightened, angry citizens all along the length of the Ohio, Congress authorized the construction of protective earthen levees around some few towns but did nothing else.

In 1913, the Ohio again flooded. In Huntington, some 2,000 refugees soon were crowded into every vacant dry building in the city. Despite the suffering, however, life went on, with some normal activities continuing. The April 13, 1913, edition of *The Herald-Dispatch* reported that three babies were born at the refugee center at the city's high school. And when the mayor ordered the city's saloons closed for the duration, bootleggers reportedly did a thriving business by boat.

The high water of 1913 brought with it a flood of public protest. Former president Theodore Roosevelt complained that millions of dollars were

going to aid the flood victims but not one penny had been spent on flood prevention. President Woodrow Wilson also was concerned and convened a special commission to study what could be done to tame the river. The commission examined several options, including the erection of additional levees and the construction of flood-reducing reservoirs. But the outbreak of World War I shelved such plans. And their revival after the war again was sidetracked by the "Black October" stock market crash of 1929 and the ensuing Great Depression.

However, a new flood in March of 1936 finally galvanized a reluctant Congress into action and another even more devastating flood in January of 1937—described as "a calamitous inundation of almost Biblical proportions"—strengthened the lawmakers' resolve. On January 26, the Ohio crested at a record 79.99 feet, after weeks of unrelenting rain poured an estimated sixty billion tons of water into the valley. The river simply couldn't hold it all, and the tremendous overflow flooded more than 12,000 square miles of land. From Marietta to the Mississippi, the flood waters closed all but one bridge across the river. The sole exception: Cincinnati's famed Suspension Bridge, which residents protected with sandbags.

The 1937 flood still is something that people up and down the Ohio talk about, much as people all across the country remember where they were when President John F. Kennedy was killed or when the *Apollo* astronauts landed on the moon. In Huntington, I grew up listening to my parents and others talking about the flood. Virtually the entire downtown Huntington business district was inundated by the river. In the lobby of the Governor Cabell Hotel, water stood more than five feet deep. Outside the hotel, rowboats made their way up and down Fourth Avenue. Six thousand Huntington residents were homeless. Emergency shelters were set up in the city's schools and churches, where relief workers struggled to feed as many as nine thousand people a day. When the river receded, five people were dead and much of Huntington was a soggy ruin.

And the same held true for the entire length of the river. The overall death toll was put at 250 people, with many other people reported missing and never found, doubtless swept downriver by the high water. The widespread death and destruction proved that flood control was no longer something that could be ignored, and the federal government finally began to take meaningful action.

Again, as had happened earlier in the century, the outbreak of war halted the flood-control effort. But this time the defeat of Nazi Germany and Japan and the arrival of peace saw not only the erection of more levees and concrete floodwalls along the Ohio and its tributaries but

also the construction of a major network of flood-control dams and reservoirs. As a result, the Corps of Engineers today operates seventy-nine such facilities in the Ohio River basin, designed to hold back water when flooding becomes imminent and then release it as the river begins to fall to a safe level. (The dams on the Ohio itself are strictly for navigation and serve only a very limited role in flood control.) Time and time again, these floodwalls and flood-control reservoirs have proven they are more than worth every tax dollar that's been invested in them, preventing untold devastation to communities along the Ohio and its tributaries.

Marietta and the River

With a population of 34,000, Parkersburg is the largest town on either side of the Ohio between Huntington and Wheeling, West Virginia. But, in the hearts and minds of most rivermen, it's upstaged by a little Ohio town some twelve miles upstream—Marietta.

Marietta's history dates from 1775 when a rude fortification, Fort Harmar, was located there. The first permanent settlement was established April 7, 1788, with the arrival of a group of pioneers under the command of Rufus Putnam. History records that the forty-eight-man company arrived via a flatboat, a barge, and three dugout canoes. Sounds a bit cramped, doesn't it?

Born in Massachusetts, Putnam was first a millwright, then a surveyor and farmer until the outbreak of the Revolutionary War, which saw him serve as a lieutenant colonel in one of the first regiments raised after the battle of Lexington. After the war, he returned to Massachusetts and resumed the farming life. But he also, in partnership with other officers who had served in the Revolution, formed the Ohio Company of Associates for the purchase and settlement of western lands. He was made superintendent of the company's proposed settlement and thus led the small party that founded Marietta, the first city established in what was then the Northwest Territory. He served as a territorial judge, as a brigadier general in the army, and as a commissioner to treat with the Indians. He was surveyor general of the United States from 1796 to 1803 and in 1802 was a member of Ohio's state constitutional convention. He died at his home in Marietta on May 4, 1824.

From its birth, Marietta—named in honor of Queen Marie Antoinette of France—was a thriving river port. In its earliest years, it played a noteworthy part in the flatboat trade and later, with the advent of the steamboat, became a favorite port for rivermen.

Today, Marietta's Campus Martius Museum recreates the town's founding. The museum stands on the site of the fortification built to pro-

tect the town's first settlers. The fort's name, "Campus Martius," is Latin for "Field of Mars" and evokes images of the military camps in which the famed legions of ancient Rome were quartered. The museum encloses Rufus Putnam's home, the only surviving dwelling of the Campus Martius fortification.

A block's walk from Campus Martius, on the banks of the Muskingum River not far from where it flows into the Ohio, is the Ohio River Museum, a three-building complex opened in 1974. A full-sized diorama recreates the aquatic wildlife setting of an Ohio waterway two centuries ago. A twenty-four-foot model of a typical sternwheel packet—a boat that transported mail, goods, and passengers—highlights an exhibit on the early years of the steamboat. A thirty-minute video on steamboat history, "Fire on the Water" contains rare footage of old excursion boats and river packets. Other displays—paintings, nautical gear, and ornate cabin furnishings—recall the golden age of steamboat travel. And there's an impressive collection of steamboat models. Most of the artifacts on display have been loaned or presented to the museum by members of the Sons and Daughters of Pioneer Rivermen, a group dedicated to preserving and publishing river history.

On the museum grounds is a full-scale reproduction of a flatboat. Perched on the lawn, looking for all the world like a gazebo, is the oldest steamboat pilothouse known to exist—that of the *Tell City*, built in 1885. And docked behind the museum, on the Muskingum, is the *W.P. Snyder Jr.*, America's sole surviving steam-powered sternwheeler. Visitors are invited to come aboard and explore.

The *Snyder* was born the *W.H. Clingerman* in 1918. Built by James Rees and Sons Company in downtown Pittsburgh for the Carnegie Steel Company, it was used primarily to bring coal from the mines along the upper Monongahela River to the Carnegie works down the river at Clairton, though it also pushed steel tows and once made a trip at least as far as Memphis. The first pilot was A.O. Ackard, a notable riverman who later was the chief of all river transportation operations for Carnegie. Captain Calvin Blazier, who wore his white hair long and flowing, much like Buffalo Bill, also guided the *Snyder,* and it was served by other well-known pilots over the years.

In 1938, Carnegie renamed the boat *J.L. Perry*, and it retained that name until the spring of 1945 when for a few months it carried the name *A-1*. In the fall of that year, it was sold to Crucible Steel Company of America, which gave it its present name. For the next seven or eight years, it towed coal, serving the Crucible plant at Midland, Pennsylvania. Finally, it was retired, still in good condition but no match for the diesel-powered towboat that replaced it.

Mounted on a steel hull, the *Snyder* is 175 feet long and 32.3 feet wide and has a paddlewheel that measures 21 feet in diameter. Her pilothouse is set forward on the second deck rather than on the roof, thus enabling her to operate better under the long bridges on the Monongahela.

She's equipped with two sets of compound engines which generate 750 horsepower. Each engine has a high-pressure cylinder twenty-eight inches in diameter and a common piston stroke of seven feet. The exhausted steam from the low-pressure cylinders is carried into a surface condenser and pumped from there into the boilers. The boiler plant consists of four "western river boilers," each twenty-eight feet long and forty inches in diameter. In each boiler are two fifteen-inch flues through which the flame, having passed under the boilers from the flame bed, returns forward and is piped into smokestacks. The boiler fuel is bituminous coal, fed to the fireboxes by automatic stokers.

Although the *Snyder* incorporated the design improvements of her day, many characteristics of her nineteenth-century predecessor boats were retained. There is, for instance, an elaborate "hog chain" support, a system of steel cables mounted on posts that stretches along the sides of the boat to keep it from "hogging," or buckling in the center. Boat builders later determined that steel hulls had more than enough strength to prevent this from occurring and hog chains became a thing of the past. And, although pilots on the *Snyder* steered using steering levers connected to a steering engine, the pilot wheel, typical of nineteenth-century boats, is still there.

In early 1955, the Ohio Historical Society agreed with the Sons and Daughters of Pioneer Rivermen that a working steamboat should be saved for future generations. Captain Fred Way, the president of the latter group and perhaps the Ohio's best-known historian ever, knew of the *Snyder* and approached Crucible Steel with a request for its donation. Marietta was the logical location for the boat, given the success of the Ohio River Museum there. After being refurbished, the *Snyder* left West Brownsville, Pennsylvania, on September 12, 1955, and arrived in Marietta on September 16 under her own steam.

Two other worth-seeing items on the itinerary for visitors to Marietta are the showboat *Becky Thatcher* and the historic Hotel Lafayette.

The *Thatcher*, moored at Marietta's Front Street, originally was designed and built by the Corps of Engineers in 1926 and christened the *Mississippi III*. She was employed by the Corps and the Mississippi River Commission as an inspection boat to supervise levee and bank revetment work. Although built as a workboat, she also included passenger accommodations for use by visiting VIPs. She was decommissioned in 1961. Over the next few years, she changed hands several times and was

shunted back and forth between St. Louis and Hannibal, Missouri. It was during this time that her engines were removed and her name was changed to the *Becky Thatcher*. In 1975, a nonprofit group in Marietta purchased the boat as a bicentennial project. She was towed to Marietta and her first deck converted to a theater, with a restaurant on the second and third decks. During the summer season, authentic nineteenth-century-style melodramas are presented. In the fall, there's an annual Showboat Revue, featuring music and scenes from the showboat era.

The Lafayette Hotel stands on the site of the original Bellvue Hotel, which was built in 1892 and was destroyed by fire in 1916. Two years later, the Lafayette opened its doors. The hotel's name comes from the 1825 visit to the Ohio Valley by the Marquis de Lafayette, and the old building abounds with touches that emphasize Marietta's historic links with the river. Displayed in the hotel dining room are a boat's telegraph, steering arms, steamboat instruments, a bell, a compass, and bell pulls. Suspended from the lobby ceiling is an eleven-foot pilot wheel, one of the few remaining pilot wheels of that size in existence today. The lounge has specially built sternwheel replicas placed around the bar, along with some original paintings of sternwheelers. And the corridor leading to the main banquet room is lined with pictures of sternwheelers.

While on the subject of historic hotels, we ought not leave this stretch of the river without also commenting on the Blennerhassett Hotel in downtown Parkersburg. Built in 1889 by William N. Chancellor, a prominent local businessman of the day, the hotel was a beehive of activity during the 1890s and the early years of our own century when Parkersburg was a boisterous boomtown, suddenly rich from the business of oil, natural gas, and lumber. The handsome hotel was fully restored in 1986 and today offers a glimpse of what life was like—for those with money to spend—during the Gaslight Era.

Unlike Parkersburg, Marietta has no floodwall, but it offers two more bridges—one carrying Interstate 77 and the other linking the Ohio city with Williamstown, West Virginia.

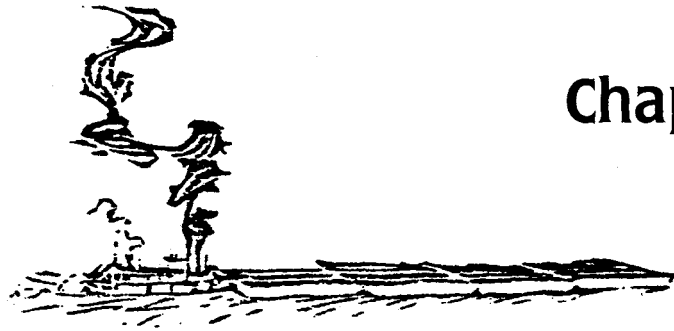
Williamstown is home to the Fenton Art Glass Company, one of the few remaining survivors of the many glass plants that once crowded the upper end of the Ohio Valley. Frank L. Fenton started the family-owned business in 1905. Today his son, Bill Fenton, has become something of a celebrity as a result of his regular appearances on the QVC shopping channel on cable television. Each year, the Fenton factory, museum, and gift shop attract thousands of visitors.

If you're aboard the *Blazer*, however, there's no time for sightseeing at the Ohio River Museum, Fenton Glass, or anywhere else. There's work to be done. It's here that we drop off the first barge from our tow, the

AO-354, loaded with 12,500 barrels of no-lead gasoline. And we pick up an empty barge, the A0-334.

No sooner are we on our way again, heading upriver, than we meet up with a sister boat, the *Valvoline*, bound downriver with its own tow of barges.

The *Blazer*, the *Valvoline*, and the *SuperAmerica* are all but identical boats and the pride of the Ashland Oil fleet. The company has been shipping gasoline and other petroleum products up and down the Ohio for nearly seventy years and, in the process, has become one of the most familiar names on the river.



Chapter 7

The first commercially successful oil well in the United States was drilled by Edwin L. Drake at Titusville, Pennsylvania. The year was 1859. Drake drilled down 69.5 feet, using tools made by a local blacksmith, Uncle Billy Smith of Tarentum, who charged $76.50 for the lot. When oil was found, Drake attached a pump and managed to bring up eight to ten barrels a day.

Four years later, Cleveland businessman John D. Rockefeller went into the oil business as a sideline to his other ventures. The rest, as they say, was history. By the 1880s, Rockefeller's Standard Oil trust—using mergers, favorable rail rates, rebates, and other tactics which today would be deemed illegal—had managed to win effective control of 95 percent of the oil refining business in this country and most of the world's oil supply. In the process, Rockefeller created one of the world's great fortunes and made the family name a synonym for vast wealth—and for philanthropy. By the time he died in 1937, Rockefeller had given away an estimated $530 million.

In 1911, the U.S. Supreme Court broke up the trust Rockefeller had created, throwing the oil industry open to all comers. One of those new "independent" players in the oil game would be Ashland Oil.

Ashland Oil traces its beginnings to 1918, when J. Fred Miles, a successful Oklahoma oilman sold his drilling company there so he could move to Kentucky and try his luck in the Bluegrass State. He was far from alone. Oilmen from everywhere were converging on the state in the wake of an oil strike brought in on Tick Fork of Cow Creek, near Irvine. Oil had been struck in Kentucky as early as 1819, although there had been no commercial production to speak of until the 1880s. The Kentucky wells seldom proved to be the rich gushers found in Oklahoma, but the Kentucky oil sands were much nearer the surface than the Oklahoma pools, thus less capital was required to drill a well. If, like Miles, you had big dreams but only limited capital, then Kentucky obviously was the place to be.

Born in Missouri and raised in Oklahoma, Miles grew up working in the oilfields. He drilled his first well at Bird Creek, Oklahoma, in 1907, the same year that territory became a state. Lining up the support of both well-heeled Chicago backers and a number of prominent Kentucky businessmen—including state senator Tom Combs of Lexington, long one of the area's leading political figures—Miles dubbed his new venture the Swiss Oil Company, the same corporate name he had used in Oklahoma. The name seems an odd choice. "Swiss" would seem to go more naturally with the word "cheese" than "oil." But, be that as it may, the company prospered.

And in 1924, fate obviously stepped in when Miles, acting at the urging of a young man by the name of Paul G. Blazer, convinced the Swiss Oil board of directors to purchase a tiny, 1,000-barrel-a-day refinery on the banks of the Big Sandy River. The refinery, built during World War I to produce lubricating oils for the military, was losing fifty thousand dollars a year for its owner, the Great Eastern Refining Company, but Blazer convinced Miles it could be operated at a profit.

For Paul Blazer, much of the refinery's appeal was in its location at the confluence of the Big Sandy and Ohio Rivers. Blazer envisioned moving crude oil from wells in Eastern Kentucky to the refinery by pipeline, then transporting refined products from the refinery to market by river barge. "Availability of crude oil would be a minor problem," he wrote in a report urging the refinery's purchase, "and the cost of transporting the crude oil from the well to the refinery would be low." In the same memo, quoted by Joesph L. Massie in *Blazer and Ashland Oil: A Study in Management*, the oilman said of the river: "The existence of river transportation from the refinery will make it possible to extend the marketing area along the river and still keep transportation costs low" (49).

Today, nearly seventy years later, that's still essentially how Ashland Oil's Catlettsburg refinery operates, although on a giant scale that even the far-seeing Blazer likely never dreamed of—more than 200,000 barrels a day.

Born at New Boston, Illinois, on September 19, 1890, Paul Blazer grew up in nearby Aledo, where his father was a newspaper editor. While attending William and Vashti College at Aledo in 1908-9, he operated a successful magazine subscription agency and the next year used that as a stepping-stone to a job as national manager of student subscriptions for Curtis Publishing, the Philadelphia company that published the *Saturday Evening Post*. One of his assignments was to come up with ads aimed at attracting fresh recruits to the ranks of youngsters selling *Post* subscriptions. In 1914, Blazer went back to school, attending the University of Chicago, but his studies were interrupted by World War I. He

joined a new hospital unit that was being formed but, before the unit was even fully organized, suffered a back injury that landed him in the hospital, where he spent two months in traction. His brief military career was over before it even began.

After a brief stint as advertising services manager for a Chicago printing company, the young Blazer gravitated to an Illinois oil company, which was operated by a schoolmate, Eric Shatford. When he was dispatched to eastern Kentucky to purchase crude oil for the company's Joliet refinery, Blazer quickly learned the ins and outs of the oil business—and hatched his dream, which he soon pitched to wildcatter Miles.

In January of 1924, the board of directors of Swiss Oil Company authorized the formation of the Ashland Refining Company as a subsidiary, hired the thirty-three-year-old Blazer as the new company's general manager and purchased the refinery he had scouted out at Catlettsburg. The purchase price for the refinery was $212,000, with $50,000 of that to be paid immediately in cash and the balance in five installments.

In short order, changes instituted by Blazer had tripled the refinery's production, and by mid-1924 the operation had edged out of the red and into the black. At the end of 1924, the refinery's profit was sixty thousand dollars—certainly a sharp contrast to its previous losses.

In 1927, Miles battled the Swiss board for control of the company, lost, and was forced to resign. Senator Combs became president of Swiss Oil and would hold that post until his death, although it's clear that he and the board relied heavily on young Blazer. In 1930, Swiss Oil expanded by purchasing the Tri-State Refining Company. The next year it bought Cumberland Pipeline's eastern Kentucky network. In 1936, Senator Combs died and was succeeded as president at Swiss Oil by Blazer who, in one of his first official acts, convinced the board to change the company's name to Ashland Oil and Refining Company.

Ashland Oil and the River

Great Eastern had been using river barges to move petroleum products from its Catlettsburg refinery, but once Blazer took charge he immediately set about expanding their use. In his report on the refinery's first year under his stewardship, as quoted by Massie in *Blazer and Ashland Oil,* he wrote: "Our river transportation has shown a profit of $6,158.13 and we expect to further strengthen this department as it offers an excellent opportunity for profit in addition to extending our sales market. Our predecessors had only six points for water delivery of gasoline and kerosene. Today, we have 21 points of delivery and at Ashland we serve

seven different customers through one river storage tank. Twelve of our customers are unable to receive delivery except by water and are entirely dependent upon us for their supply" (122).

The new refining company's initial river "fleet" consisted of one small boat, the *Colonel*, which pushed one barge with five tanks mounted on its hull. Having low horsepower, it could venture no further upstream than Huntington, and Ironton, Ohio, marked the downriver limit of its trips. The company added a second boat, the *Scout*, in 1926, and a third, the *Ruth Ann* in 1930. The latter boat made river operations possible as far as Cincinnati and Charleston, West Virginia.

In 1936, Ashland took delivery of the *Senator Combs*, the first towboat constructed specifically for its use. Author Otto J. Scott, in *The Exception*, his 1968 corporate history of Ashland Oil, wrote that Blazer was a frequent visitor to the boat during its construction, "peering into every cranny, asking for minute-by-minute reports on the specifics of its engines, its speed in the water with and without tow" (125). With 300 horsepower, the *Combs* was one of the finest and most powerful boats on the river. In 1938, it pushed its first cargo-type barges from the refinery down the Ohio to Cincinnati. Gone were the tanks mounted on the hull, now the cargo was carried in the hull itself.

By 1939, the *Combs* was moving only 40 percent of the total tonnage transported on the river by the company, with the remainder being handled on a contract basis. Accordingly, Blazer made a momentous decision: Ashland would build a company-owned river fleet. As noted by Massie in *Blazer and Ashland Oil*, "That decision had a fundamental effect on (Ashland's) future growth. Other companies were using the river at an increasing rate, but many were leasing rather than buying their equipment" (125).

The first new towboat to be added to the Ashland fleet was the 1,200-horsepower *Jim Martin*, named for Ashland's chairman of the board and launched in May 1940. It was followed, in short order, by three more boats, each done to a standard design and rated at 1,600 horsepower. The *Ashland* went into service in May 1941, the *Paul Blazer* in December of that year, and the *Tri-State* the following May. Each of the three cost approximately $300,000 to build, not including the necessary barges.

The addition of the new boats was to be of critical importance in helping Ashland Oil move desperately needed oil and gasoline during the World War II years. With the war's end, Blazer spent one million dollars to modernize its river fleet, remodeling first the *Ashland* and later the *Tri-State* and the *Paul Blazer*. In addition, fifteen new 585-foot barges were ordered.

But soon Blazer ordered yet another expansion of the company's fleet.

In 1954, Ashland purchased a towboat from the Standard Oil Company (Ohio) and renamed it the *Valvoline*. In 1951-52, the company added two new boats, the *Aetna-Louisville* and the *Allied-Ashland*, which, with 4,800-horsepower each, were the most powerful on the inland waterways. The names of the three boats reflected the names of oil companies that Ashland had acquired over the years—the Freedom-Valvoline Oil Company of Freedom, Pennsylvania (1950), the Allied Oil Company of Cleveland (1948), and the Aetna Oil Company of Louisville (1950).

At this point, all of Ashland's boats continued in operation with the exception of the *Senator Combs*, which the company sold in 1949. "It is with considerable regret, that I report the sale," Blazer wrote. Much smaller than the other boats in the company's fleet, it required a crew of equal size and thus was operating at a loss. In 1955, two more boats were purchased—the *Winchester* and the *Cherrystone*.

In 1957, Paul Blazer retired as the chief executive officer of Ashland Oil, having built—almost from nothing—a company with a quarter of a billion dollars in annual sales. And, as part of Blazer's considerable legacy, the company boasted a boat and barge fleet that was carrying 2.5 billion ton-miles of cargo each year.

Since then, Ashland Oil has retired all its older towboats and replaced them with an entire new generation of modern vessels.

In 1966, the *Ashland* was added to the fleet. Powered by twin 5,000-horsepower Alco diesels, it was built for the company by St. Louis Shipbuilding in St. Louis, Missouri.

The smaller *Tri-State*, which boasts two GM 3,800-horsepower diesels, originally was built by the Greenville Shipbuilding Corporation in Mississippi for the Vickers Towing Company of Greenville. Christened the *Nita Vickers* at her launching in 1972, she was purchased by Ashland Oil and renamed two years later.

The *Kyova*, a local harbor shift boat that is used for spotting barges into the company's three refinery-area terminals, was built in 1983 by Janoush Marine in Rosedale, Mississippi. Her two Cummins diesels of 1,000 horsepower each are a far cry from those used to power the company's line-haul boats.

Today, the crown jewels of the Ashland Oil river fleet are the *Paul G. Blazer*, the *SuperAmerica*, and the *Valvoline*, all three built in 1987 at Quality Shipyards in Lou Houma, Louisiana, and virtually identical in design.

In addition to the six vessels that Ashland Oil owns, it charters a seventh, the *Mary Claire*, which is used for the company's barge deliveries on the Kanawha River. Built in 1967 by Wagren Steel Company in

Greenville as the *Tunica*, it was purchased and renamed in 1986 by the Pittsburgh Tug Company of Evens City, Pennsylvania.

Pipelines and Barges

Today, the Ashland Oil fleet continues to serve the company's Catlettsburg refinery in almost precisely the same fashion as Paul Blazer envisioned when he proposed the refinery's purchase in 1924.

Moving crude oil and petroleum products is a complex process that can involve one or more of five different types of transportation—crude oil tankers (among the largest ships ever built), pipelines, river barges, highway tank trucks, and railroad tank cars.

Ashland Oil's Catlettsburg refinery receives 99 percent of the foreign and domestic crude oil it processes by pipeline.

As one of the nation's largest inland refineries—most refineries are found on or near the nation's coast lines where access to large ocean-going tankers is possible—the Catlettsburg facility relies on pipelines for crude oil delivery.

Pipelines make up the nation's largest single oil transportation system. They operate so silently and efficiently, however, most people aren't even aware they exist.

Foreign crude oil bound for Catlettsburg begins its 1,100-mile pipeline journey at the Louisiana Offshore Oil Port (LOOP), owned in part by Ashland Oil. From the unloading point at LOOP, some nineteen miles offshore in the Gulf of Mexico, foreign crude oil is routed to the Capline pipeline—forty inches in diameter—which starts at St. James, Louisiana. Ashland Oil also is a part owner in Capline.

In addition to the foreign crude oil that's received from LOOP, domestic crude oil enters the Capline at St. James, as well as at Liberty, Mississippi. The Capline system then moves all this crude oil north to Patoka, Illinois. There, the Capline connects with a twenty-inch pipeline that pumps both foreign and domestic crude oil to Owensboro, Kentucky. From there, a twenty-four-inch pipeline moves 200,000 barrels of crude oil daily to the Catlettsburg refinery. Owensboro and Albion, Illinois, also serve as starting points for the movement of domestic crude oil, which eventually reaches the Catlettsburg refinery.

All these crude oil pipeline activities and operations—from Patoka to Owensboro and from Owensboro to Catlettsburg—are controlled by computers at Ashland's headquarters in Russell, Kentucky.

Ashland's Catlettsburg refinery produces 2 percent of all the gasoline made in the United States. That 2 percent is 1.5 billion gallons of gaso-

line a year, or 4.3 million gallons per day or 50 gallons every second. You could drive the average car an entire year on the gasoline it takes the Catlettsburg refinery just 11 seconds to produce. Each year the refinery produces enough gasoline to supply every car in Kentucky and West Virginia every day of the year. Put another way, that's enough to pump eleven gallons of gas into the tank of every car in the United States.

At the same time, the Catlettsburg refinery makes more than half the asphalt used for paving West Virginia highways and one-third of the asphalt used in Kentucky. It produces 185 million gallons of kerosene a year. If a giant 747 airliner would travel around the world, at the equator, until it used all the airline fuel the refinery can produce in a year, the plane would circle more than eleven thousand times. The refinery's annual production of diesel fuel is about 680 million gallons. That's enough to run ten thousand eighteen-wheelers from Washington, D.C., to San Francisco and back seventy-two times.

And petrochemicals manufactured at the Catlettsburg refinery are used in such items as telephones, air conditioners, carpet sweepers, refrigerator linings, shower doors, folding doors, electric blankets, house paints, digital clocks, TV cabinets, loudspeakers, soap dishes, drinking cups, and toilet seats.

About 21 percent of the petroleum products made at the refinery are shipped by tank trucks—which, in one eight-thousand-gallon load, can carry enough gasoline to run your car for ten years. Railcars are used to carry approximately 4 percent of the refinery's output, mostly liquefied petroleum gases (LPG), petrochemicals, lube oils, and asphalt. Pressurized, insulated cars are used for LPG and the cars used for asphalt have special heating systems to keep the product liquid while it's being delivered.

But it's barges that transport more than 80 percent of the 210,000 barrels of refined petroleum products made daily at the Catlettsburg refinery. More than 1,000 barge loads of asphalt, lube oils, and petrochemicals leave the refinery on the Big Sandy each year. Another 3,000 barge loads of kerosene, jet fuels, diesel, and all grades of gasoline originate at the nearby Kenova terminal. With 175 tank barges, Ashland boasts one of the largest barge fleets on the inland waterways.

Light finished petroleum products are loaded into barges at the company's Kenova facility. A second, located on the Big Sandy River to the South, is where heavy oil products or petrochemicals are loaded. And a third terminal, at Catlettsburg, is where the company's towboats tie up to be supplied or repaired and where barges are cleaned and, when necessary, overhauled.

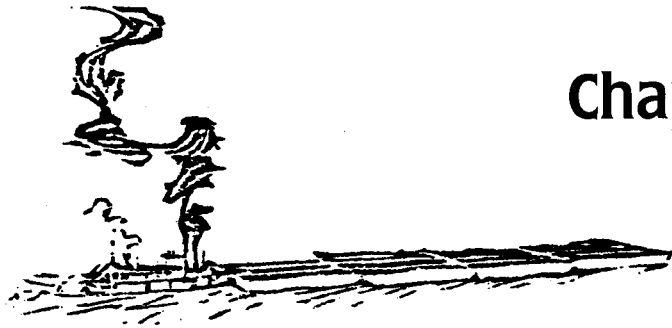
The repair terminal is, in effect, a small shipyard. Employees there routinely are busy in a variety of duties, ranging from "stripping" and cleaning barges to welding and engine repairs.

Barges arrive at the terminal after being unloaded at one of the company's river terminals. Unless an identical cargo is to be loaded into the barge, whatever remains is stripped—removed—with large vacuum pumps. Barges can hold anywhere from ten to thirty thousand barrels, and when they dock they always have at least some of their contents left in them.

In a typical year, the terminal will service nearly one thousand barges. That not only means stripping the barge but also washing it so it can be filled with new product. The material pumped from the barges is stored in tanks at the facility, then burned in boilers to heat the water used to clean the barges. After the wash water is removed from a barge, powerful blowers circulate air throughout the barge to clear the remaining hydrocarbon vapors.

Once a marine chemist certifies that the barge is "gas free," it is ready for a number of different steps. It may go right out for reloading for another trip. Or it may go to another area for "hot work"—servicing by welders, electricians, pipe fitters, or mechanics.

Terminal employees can do all the "topside" work themselves, but if a barge or boat needs work below the waterline, it must go to an outside drydock.



Chapter 8

Life on the river is very different from life on shore, and, as I was to discover during my brief stay aboard the *Blazer*, there's a whole vocabulary to it that's strange to those of us who live and work on dry land—or "on the bank," as a riverman would put it.

What we'd call a "rope" a riverman calls a "line." What we might call a "cable" is something else in river talk. When a riverman talks about a "cheater bar," he's not describing a drinking place where two-timing husbands and wives hide out. And the process of "facing up" has nothing to do with lipstick or powder.

As we make our way upstream, Captain Davis is unfailingly patient in explaining to me the intricacies of life on the river and in translating for me the strange lingo I sometimes hear.

A line? That's the two-inch nylon rope used to tie up the boat. "It comes in a 600-foot roll. We cut it up in 150-foot lengths, then put an eye in the end of it," Davis explains.

The metal cables used to lash the barges together into a tow are called wires by rivermen. Unless the wires are kept absolutely taut, the barge is apt to break free from the tow, so the deckhands are constantly tightening the ratchets that link them. "And the metal bar that you use in doing so is a cheater bar," says Davis.

Facing up? That's the term for wiring the boat to the tow.

My vocabulary drill over for the day, and the river ahead looking quiet and peaceful, I ask Captain Davis to tell me a bit about himself.

"I was born in Carter County, Kentucky, between Olive Hill and Carter City. On July 8, 1948. I went to Carter City High School. Course it's gone now. Now they just have two big high schools in the county. Back then they had the small high schools, you know. We lived about seven or eight miles from the school. On a farm, of course. My daddy, Floyd Davis, had 180 acres. He raised tobacco, cattle and hogs and chickens.

"I've got two brothers and a sister. I'm the youngest of the four. My oldest brother's name is William. My other brother's name is Noah—it's

spelled just like Noah in the Bible. It was my grandfather's name. My sister's name is Noretta. My mother's name was Irene."

The captain stops to light another cigarette, and I ask him how he got started working on the river.

"It was my brother Noah. He was working on the boats at the time. He helped me get on. But he made it clear I couldn't expect to ride on his coattails. He told me: `Once you're out here, you're on your own.'

"It was October of 1966, and I was 18 years old. I started out as a deckhand on the old *Aetna-Louisville*. We ran down south then. I remember that after that first trip we all got off the boat down there in Natchez, Mississippi, the day before Thanksgiving. There were three or four of us. We were all brand-new guys, and we'd all gained weight. (Everybody does, you know, when they first start out.) We'd gained so much our clothes wouldn't fit us. I gained 24 pounds in thirty-three days. I had weighed 160 pounds when I started. When I got off the boat I weighed 184.

"They picked us up in a company plane at Natchez and flew us home. We landed at the Worthington airport just outside Ashland. We all had been gone a month and had come back with real nice-sized checks. It was kind of like going home after the big war. We were on top of the world.

"Being on the boat, especially down there on the Mississippi, was a whole different world for me. I'd never been no place except the family farm. And the boat went right on south, down below New Orleans. It was like the end of the world. I just felt like we were gonna drop off the edge at any time.

"The next trip I was on the *Allied-Ashland*. The *Aetna* and the *Allied* were sister boats, exactly alike. One was built in 1951 and the other in 1952. They were 50 feet wide, 150 feet long. They had three engines and 4,800 horsepower. They're still in service today under different names. Ashland sold them to a guy down in New Orleans. He repowered them, gave 'em 5,600 horsepower. One's the *Christopher N*. And the other's just the *Allied*. They dropped the *Ashland* part of the name. They run the lower Mississippi.

"Soon I was running third mate. In 1968, I went on the *Ashland* on the after watch and relieved Chester Workman for Christmas. He went on to be captain of the *Tri-State* and has since retired.

"I decided I wanted to drive one of these boats. So I figured I would stick it out until I was thirty years old and see what happened. It looked to me like up here in the pilothouse was the best place to be. So in '69 I went first mate on the *Ashland*. Back then the economy was good, and we had a big turnover. People came and went, and if a man put out a

decent effort the positions came along so that he could move right on up.

"I went on the *Ashland*, and they didn't have a mate. The one who was on there had quit. Willard White was the captain then. He asked me if I would like to be first mate. I said sure. The *Ashland* was a new boat, you realize. It had just come out in '66. All the equipment was new and it was really comfortable. Shucks, it was like living in a floating hotel.

"So there I was, I was first mate on the *Ashland*, and my brother Noah was first mate on the *Valvoline*. The word was there would be some steering jobs come open. Also some jobs in the fleet down at Kenova. Noah decided he'd rather take a job on the bank, where he could be home every night, so he's been there at Kenova for eighteen years.

"But I still wanted to drive one of these things. So I started steering. That was February of 1973, and I started standing watch that fall. I've had a pilot's license ever since."

Learning the River

Anyone who has read Mark Twain's *Life on the Mississippi* is aware of the romantic image of the riverboat pilot that Twain spun for his readers. "Your true pilot," Twain wrote, "cares nothing about anything on earth but the river, and his pride in his occupation surpasses the pride of kings" (50). And the famed writer recounted how he had to learn the river like the back of his hand before he could get his coveted pilot's license. Today, pilots still learn the river much as Twain did—from experienced pilots who are willing to break them in.

"I steered a lot when I was mate," says Davis. "We'd run from Owensboro to Ashland, hauling crude oil, and everything was routine. We always had the same eight barges. When you turned, you just unfaced the boat, faced up to the other tow, and went. It was all routine. You knew what you had to do. You had five and a half to six days to gauge your barges, set your valves, clean the boat up, and shine the brass. It was like clockwork.

"We didn't have to do the work these boys do now. You left down there and it was sixty hours shoving back up here and you kept that same tow intact. Now, you know, you might get up on the upper end of the river and make a lock, drop a barge, and rearrange tow and stuff like that. All on the same watch. And that happens just about every watch, it seems like. Things were a lot different then. You had that steady run.

"The pilots I was on with, you know, they'd let me steer—after midnight and on Sunday. So I started standing pilot's watch in November of '73.

"I took my pilot's test in Huntington. Today, you've gotta go to Memphis since they've done away with so many Coast Guard stations. And you gotta go to school. If you don't go to school, you usually don't pass. They'll get you on something. I've not been there. But what I've heard is that the people who teach the school are retired Coast Guard people. And if you don't go to school—it costs like $500—then you don't hardly pass their tests. The company will pay for you for one trip. So if you go down there and don't go to school and don't get your license, then you've got to foot all the bill yourself if you go back again.

"To be honest, I didn't really study none for the test. I'd planned on it, but it was first one thing and then another. You know how it is when you're nineteen or twenty years old. You've got other things on your mind.

"It was a six-hour test. Three hours of it was open book and three hours closed book. I didn't even break for lunch because I hadn't slept much the night before. I knew I had to be up there early. As it was, I got there way too early and had to wait around. I sat out there in the car and studied until nine o'clock. That was pretty much the only studying I did for it. Along about noontime, the Coast Guard commander said I'd better go eat. I told him I had a pretty good ways to go to get home and would just as soon keep right on working. I figured I had failed it anyway.

"But when they checked it they must have figured that as dumb as I was there wasn't really a lot of point in bringing me back, so they went ahead and gave me my license."

Captain Davis has been on the *Blazer* since it went in service.

"I was relief captain on the *Ashland* for three years, then I switched over to the *Aetna-Louisville*. Then in January of '87, when this boat came out, it replaced the *Aetna-Louisville* and so I came over here as relief captain. And then last February, when Captain Gene Dent retired, I moved on up to captain.

"Captain Dent had been with Ashland for forty years. The night that I started, Captain Willard White got off the *Aetna-Louisville*, Gene was relief captain and he moved up to captain, and Willard took a few days off and then brought out the *Ashland* when it was built.

"That's kinda the policy. You're pilot for a while, then you switch from boat to boat as relief captain. But they try to get you as relief captain on a boat that, sooner or later, you're likely to move on up to captain on. When that captain does retire. See, that was the point of switching me from the *Ashland* to the *Aetna-Louisville*. I came on the *Aetna-Louisville* and then came on the *Paul Blazer*. And Zane [Meek] just told me, well,

we ought to start putting people on them new boats who's gonna be on them for a while. And so when Gene retired, that's when they moved me on up."

But, I ask, isn't Stanley Tumlin, your relief captain, nearing retirement?

"Well, he didn't want to take a relief captain's job. He just wanted to be a pilot. That way he wouldn't have to worry about a lot of the paperwork and things like that. But, as he got closer to retirement, he decided he'd be better off leaving as a captain, rather than a pilot.

"Here's an interesting thing: I rode with Stanley on the lower Mississippi River, with him teaching me the river. And I was first mate when he was pilot on the *Ashland*. He's been here thirty-six, maybe thirty-seven years." (Note: Tumlin did, in fact, retire in May of 1994.)

I ask Captain Davis if we can talk a little bit about his family.

"Juanita and I got married in 1968. Jarrels was her maiden name. I met her down there at the restaurant at Carter City. She's originally from Greenup County. I was already working on the boats when we started going together.

"We've got three boys. Our oldest boy, Jimmy, is in Louisville. He's a radiologist. Works in a hospital down there.

"Our middle boy's Jerry. He was twenty-one in December. He's been in the Army for two years now. He's stationed at Fort Myers, in Arlington, Virginia. Right across from Washington, you know. He's in the ceremonial guard unit there. They offered him guard duty at the Tomb of the Unknown Solder, but he didn't take it. He wanted to take some more training instead. He likes the service real well. He was home this last time I was in. He's only been home twice since I've been in. Nine days once and a week this last time. That's only fifteen days in two years. He calls every week, though.

"And, of course, we've got the one boy still at home. Joey. He's seventeen. He'll be a senior in high school next year."

I point out that all three of the boys' names start with the letter "J" and suggest that might be confusing.

"Juanita named 'em. My name is Ronnie James. And the oldest boy's name is James Ronnie. So she just turned my name around. But he's always gone by Jimmy. He went to school at Morehead [State University]. But the middle boy didn't want to go to college. He had talked about the service for a long time. He worked for my brother for about a year after he got out of high school. At that time, he—my brother—had two car agencies. He sold Fords at one, and he had a Chrysler agency up at Whitesburg.

"Joey's not quite sure what he's gonna do. He likes to work with his

hands, and he likes farm work. Tractors and things like that. He took welding in vocational school. He says he doesn't want to go to college, but then he may change his mind. He doesn't ever bring a book home, yet he has a grade average of better than 3-point. He likes to work. He's a good, hard-working kid.

"You know, my dad hadn't had any cattle for several years. So Joey went down there and cut brush, and he decided that cattle would help keep the brush down. So he put up twelve rolls of barbed wire and I don't know how many posts. Four or five gates. I didn't say nothing until he got through. The six-hundred-something dollars he spent on wire was his own money that he had earned working from other farmers. You know, stripping tobacco and what not. So we got three cows and two calves while I was home the time before last. They're just two-year-old cows. These are their first calves. They should be productive for a long while."

Captain Davis, like virtually everybody else I talked with on the *Blazer*, agrees that being away from your family for weeks at a time is likely the toughest part of working on the river. But he has his own prescription for dealing with that problem: "You just try to make every time you're home seem like Christmas."

Look at that Blonde

Captain Davis and I have talked the morning away, and it's now afternoon. He's down below, trying to nap. He's been replaced at the helm by Ronnie Davis, and I'm about to discover a favorite Sunday afternoon activity for the crew: girl watching.

Ordinarily, visitors to the pilothouse are few, and when a crewman does appear it's almost always on business. That's understandable. After all, the crew is busy, and, when not on watch, members are apt to be sleeping or eating. That doesn't leave a lot of spare time. Plus, when the captain's at the helm, a trip to the pilothouse could easily result in an unexpected (and unwelcome) assignment of some kind. But, with the captain down below and the pilot on duty, the atmosphere is more relaxed and so the pilothouse is now crowded. Its panoramic windows offer a perfect view of the increasing number of motorboats on the water, with the boaters enjoying a lazy afternoon on the river. When one of the small boats ventures close, binoculars are pressed into service for a close view of the occupants. Houseboats, I quickly learn, are much desired targets because they move so much slower and thus provide time for a more leisurely inspection of those aboard.

Many of those getting inspected by the crew wave at the *Blazer*. I wonder: Can they see us? Do they know what we're up to? Are the women aboard aware that their charms are being rated?

"There's just something about women and boats," says Ronnie Burge.

"Why, I've been down to Grayson Lake with my boat—I've got a little seventeen-footer with an outboard that I like to take out down there—and I've seen the gals there take their tops right off and wave 'em at you as you go by. My wife was with me one time and she told me, `Hey, you're not coming down here alone anymore.'"

We're nearing the Willow Island Locks and Dam, so the deckhands soon will have to venture out on the tow to assist in locking through. The show is over for the day.

Willow Island and Beyond

Willow Island Locks and Dam—at Mile 162—replaced obsolete Locks 15, 16, and 17. It has two locks—one is 1,200 feet long and the other 600 feet—which are on the Ohio side. There's an observation platform, which allows visitors a good view of boats and barges as they lock through. (The platform, it might be noted, also provides those in the pilothouse of the *Blazer* a good chance to scan the visitors with binoculars, looking—alas, in vain—for pretty girls.) The locks were completed and placed in service in 1972; the dam itself was finished four years later. The project's total cost: $78.1 million.

We're the only boat on hand, so locking our way through takes only forty-five minutes or so. Then we're on our way again—for all of ten minutes, until we reach Eureka, West Virginia. There we tie off the tow and work free the empty barge—the AO-334—that we picked up at Marietta.

It's time for the watch to change.

"Well, what do you say now, Ronnie?" asks Captain Davis as he enters the pilothouse. Quickly, Burge briefs the captain on our status, then heads below.

The empty AO-334 is to be delivered to the Quaker State Refinery at St. Mary's, West Virginia, but there's no room to maneuver it free from the tow there. So, we will leave the rest of the barges here, shuttle the AO-334 the four miles or so up to St. Mary's, then return and pick up the tow. We leave one of the young deckhands aboard the barges to keep an eye on them while we're gone. He has an emergency light, a radio, and a bottle of water. Then we push off and head upriver.

All this is happening in the shadow of the two giant cooling towers of the Willow Island Power Station. Owned by Monongahela Power, Wil-

low Island looks more or less like the other generating plants that line the banks of the Ohio, but, unlike them, it has a grim story to tell—a story of fifty-one men killed in an April 27, 1978 construction accident. The men were standing on a scaffolding at the top of a 168-foot cooling tower, still under construction. They were preparing to pour a layer of concrete when the scaffolding gave away, dumping them to the ground. "I looked up, and men were screaming and hollering," said one witness. "They just fell like dominoes."

None of those on the scaffold survived.

"I never go by here and look at those towers that I don't think about those men," says the captain.

We float along in silence for a while.

At St. Mary's we find another barge already tied up, which means that docking is no easy chore. Unlike most houses along the river, which are perched well up the bank, well out of reach of high water, two houses here have been built only a few feet from the dock. The residents come out to stand in the yard and watch us dock. Things must be awfully dull in St. Mary's if this is the most exciting thing that's going on. Just upstream, a half dozen kids can be seen diving into the river from a homemade dock.

While Captain Davis struggles the *Blazer* into position, another towboat comes into view, pushing a tow of coal barges downriver. Using the binoculars, I read its name. It's the *James C. Justice*. Since 1945, the *Waterways Journal*, the weekly newspaper that chronicles doings on the rivers, has published an annual volume which is an index for all the nation's operating towboats. You'll find a copy of *The Inland River Record* in the pilothouse of virtually every commercial boat on the river. On the *Blazer*, it's kept near the official logbook. Consulting it, I find that the *Justice* is a twin-screw towboat built by St. Louis Ship in 1979. She's 138 feet long and 44 feet wide, is powered by two General Motors diesels rated at 5,920 horsepower each, and is part of the fleet operated by the Ohio River Company.

A Quick Trip to the Store

Dropping off the empty barge at St. Mary's, we head back downstream to pick up the tow we left at Eureka.

It's at this point that a crisis hits the *Blazer*. It seems that Wilma, the boat's cook, is running low on flour. She comes to the pilothouse and informs Captain Davis of her plight. "No problem," he says as she leaves. And he then tells me he's going to have the mate, Jeff Brown, get off and run to the store to pick up a ten-pound bag.

At first, I think I'm having my leg pulled. I figure the captain and the cook, knowing how ignorant I am about life on the river, are having a bit of fun with me and have cooked up this exchange as some sort of elaborate practical joke at my expense. We're in the middle of the Ohio River, for goodness sake. How do you send somebody to the store for a bag of flour?

But that's exactly what we do.

Minutes later we come to the little Ohio community of Newport, where the captain gently noses the *Blazer*—now traveling without any barges, or "lightboat" in river talk—into the grassy bank. A long aluminum ladder is stretched out and pressed into service as a makeshift gangplank. Jeff makes his careful way along it, then climbs up the steep bank to the road and strolls to a nearby store, located just a stone's throw away.

While Jeff's gone we attract a small crowd of curious onlookers—mostly youngsters but also a few adults. And, as we wait for his return, the captain tells me that he frequently stops here to pick up things Wilma needs. Knowing the boat was nearing Newport was what prompted Wilma's trip to the pilothouse with a request for a bag of flour. "You try to make sure you have everything you need when you leave," the captain says. "But it seems you always run out of something. So you learn the places where you can put in and get things. We generally end up putting in here for something most every trip."

Jeff is back, the flour tucked under one arm and a twelve-can pack of Mountain Dew soft drink under the other. He makes his way down the bank and along the ladder. It's quickly pulled aboard, and we're on our way, our grocery shopping done.

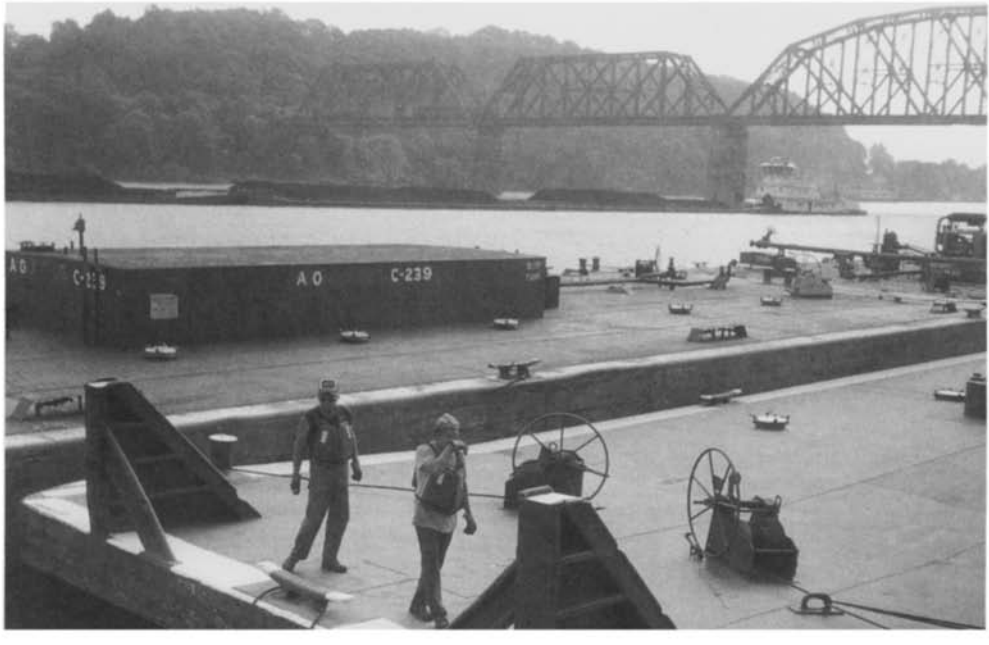
In a matter of minutes, we're back at Eureka and picking up our tow when Captain Davis gets a radio message from another boat just visible in the distance downstream, the *Terese Marie* by name, which wants to put in at the bank at the very spot where we're working. Captain Davis assures the other captain that we'll be out of the way long before he gets here, and he proves to be as good as his word. We face up to the tow and get back under way long before the other boat arrives. While the captain is busy, I check the *Inland River Record* and am surprised to find that the *Terese Marie*, built in 1981, already has changed hands five times. Built for a Minnesota company, she's been leased or owned by a succession of firms in Missouri, Kentucky, Indiana, and now Pennsylvania—John's Towing Company of Shippingport. Without knowing the details of the boat's history, I can't prove it, but my suspicion is that her checkered history is a result, at least in part, of the recent recession which has hit the barge business hard. Many smaller operators have been put out of business, gone bankrupt, or been forced to merge with larger compa-

The *Paul G. Blazer,* a powerful twin-engine craft, was launched in 1987. Unless otherwise indicated, all photographs by the author.

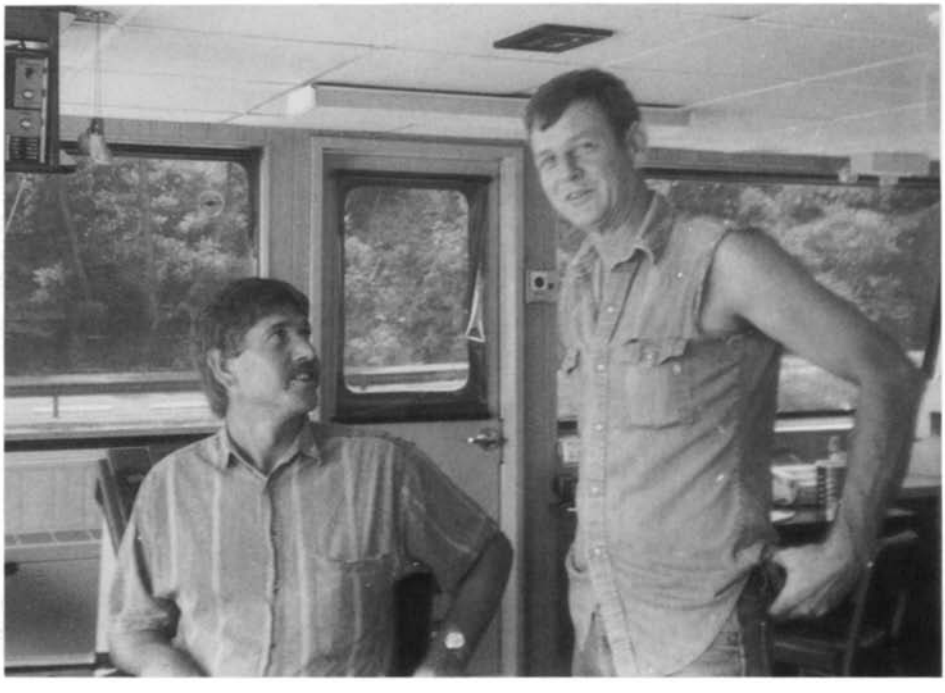
A *Blazer* deckhand tightens a line attached to a floating pin in the lockwall at Gallipolis.

In summer, the temperature on a barge can easily soar to over one hundred degrees Fahrenheit.

Below, deckhands work as an unidentified towboat pushes loaded coal barges past in the background.



Captain Ronnie Davis has been on the *Blazer* since it went into service.



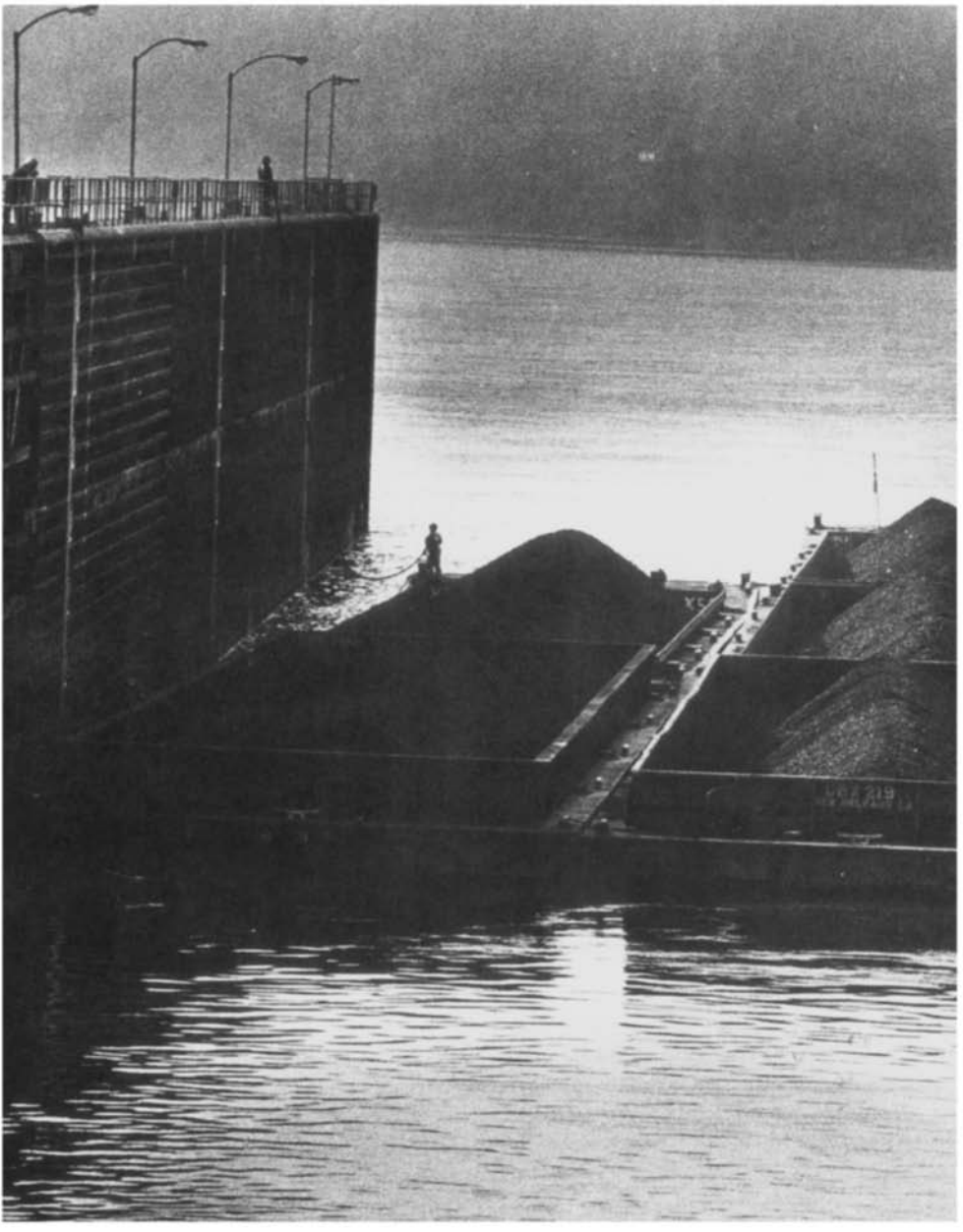
Pilot Ronnie Burge (left) and engineer Steve Bellomy talk things over in the *Blazer*'s pilothouse.

The *Blazer* pushes a tow toward the East Huntington Bridge.

Navigating bridges challenges the skill of river pilots.

Deckhands at work.

A deckhand coils a line. The pouch on his back holds a radio that links him to the pilothouse.



A loaded coal barge is floated out of a lock chamber to make way for the rest of the tow. Photo by Frank Altizer. Courtesy of the *Huntington Herald-Dispatch.*

Keeping the *Blazer*'s hungry crew fed is a big job for cook Wilma Parker.

The author takes the helm of the *Blazer*. Photo by Captain Ronnie Davis.

Kathy Gibbs, deputy public affairs director for the Huntington District of the Corps of Engineers.

In a quiet moment, Steve Bellomy feeds a flock of geese from the deck of the *Blazer.*

nies. Others have trimmed their fleets, temporaily docking some boats or barges or even selling them off.

Something else about this little episode is worth remarking: the exchange between the *Blazer* and the *Terese Marie* is a perfect example of the exaggerated politeness and cordiality that those on the river use in talking with each other on the radio. A gruff voice on the air is a rarity. It's another tradition—and one suspects that those who violate it do so at considerable risk to their reputation among their colleagues on the river. Veteran rivermen pepper virtually all their radio exchanges with phrases like:

"That's good."

"That's fine."

"Mighty fine."

"Sure do appreciate it."

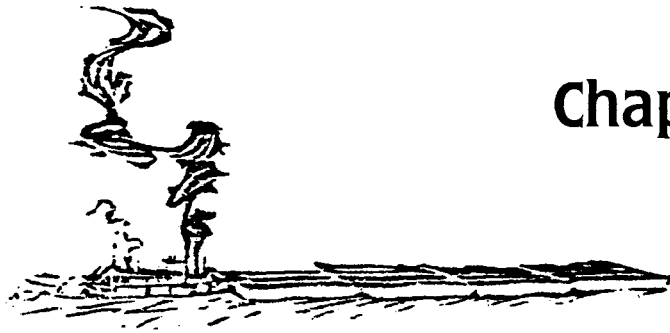
"Thanks for the cooperation."

Maybe all this is sincere, maybe it's bogus, maybe it's some combination of the two, but it has a nice ring to it, and I can't help but wonder if maybe those of us who work on shore might not do well to emulate the rivermen and say "thanks," etc., to our coworkers and others far more often than we do.

Once we're reunited with our tow, we then cross the river to the Ohio side, to pick up a barge loaded with 24,000 barrels of crude oil that's waiting for us at the Buckeye Pipeline dock at Bell's Run.

"Make sure the papers are in order," Captain Davis tells Jeff by radio as the mate climbs aboard the waiting barge. Going to a metal mailbox that's located midbarge, the very same kind you see perched on posts along country roads, Jeff opens it and examines the documents he finds. Everything seems okay.

Dropping off the empty barge at St. Mary's and then picking up this loaded one means the tow virtually has to be torn apart and reassembled. It's going to be a long process. So, even though it's only 2230 hours—or 10:30 P.M. for those on shore—I decide to have a dish of ice cream and turn in early.



Chapter 9

It's Monday, our third day out. Fresh from the shower, I admire my beard in the bathroom mirror. It's finally beginning to look like more than a case of five o'clock shadow. Shucks, maybe I'll just keep it at the trip's end. I've never worn a beard before. Not even a mustache, for that matter.

Wilma's breakfast is delicious, as usual. How is it that at home I ordinarily have nothing but coffee for breakfast but out here on the river find myself absolutely starved every morning? After all, sitting up there in the pilothouse, watching the world go by, isn't exactly what one would call hard work. I can hardly claim that I'm working up this kind of appetite. Or working any of it off. If I keep this up, I'm going to be as fat as a hog by the trip's end.

On my way out of the galley, I remind Wilma that I want to sit down with her for an interview at some point.

"Sure," she says, "I've been interviewed before, you know. They took my picture and everything."

Joining Captain Davis in the pilothouse, I look over the log and the chartbook to see what progress we made during the night. Getting underway again and resuming our upstream journey, we returned to St. Mary's and passed under its Hi Carpenter Memorial Bridge, made our way past a large island that some people call Bat Island and others know as Grape Island (there must be an intriguing story about the island and those differing names, but it eludes me), past the West Virginia town of Raven Rock, past West Virginia chemical plants operated by the FMC Corporation and Union Carbide Corporation, past the twin towns of Grandview on the river's Ohio shore and Friendly on the West Virginia side, past islands named Grandview, Mill Creek, Wells, and Crab, past the little Ohio communities of New Matamoras and Cochranville, past the West Virginia towns of Sistersville (established in 1815 and named for sisters Sarah and Delilah Wells who owned the land where the town is now located) and Paden City (named for early settler Obediah Paden),

past Williamston and Paden Islands and under the New Martinsville highway bridge.

We locked through at the Hannibal Locks and Dam, located at Hannibal (pop. 525) on the Ohio side and about 1.5 miles upstream from New Martinsville (pop. 7,109) on the West Virginia shore. The Hannibal project cost $87.2 million and took nine years to build. Construction of the locks—located on the Ohio side of the river—started in 1966 and was completed in 1970. That same year saw work start on the dam, which was finished in 1975. The project replaced obsolete Locks and Dams Nos. 12, 13, and 14.

The city of New Martinsville, under license from the Federal Energy Regulatory Commission, built and, in 1988, began operating, a hydroelectric power plant at the dam's left abutment on the West Virginia side of the river. The plant contains two generating units with a total capacity of 34,000 kilowatts.

Just a bit downstream from the Hannibal Locks and Dam, we crossed an invisible but important line—the boundary between the Huntington and Pittsburgh districts of the Corps of Engineers. From Cairo, Illinois, to Foster, Kentucky, the Ohio and the many locks and dams along it are under the supervision of the Louisville district of the Corps. From Foster to New Martinsville, it's the Huntington district that's in charge. From New Martinsville to Pittsburgh, it's the Pittsburgh district.

Just upstream from the dam is a similar invisible line that separates the jurisdictions of the Huntington and Pittsburgh marine safety offices of the U.S. Coast Guard.

By 0600 hours and the change of watch, we've continued on upstream and reached, at Mile 121, a giant chemical plant operated on the West Virginia side by Mobay Corporation. Founded in 1954 and located on a two-hundred-acre tract, the Mobay plant employs more than a thousand workers and produces urethane for insulation, furniture, and autos and iron oxide that's used in construction materials and paint.

It's at this point that I make my morning arrival in the pilothouse. ("Well, what do you say now?") The lights of the Mobay plant twinkle on the West Virginia shore, looking like some futuristic city, while the Ohio bank is lined with trees, looking, one suspects, very much like it must have appeared when the very first settlers made their way down the river on their flatboats. The two banks offer quite a contrast.

Shortly after I arrive in the pilothouse, it starts raining again, with lightning dancing all around.

"I planned on having the boys do some painting today," says Captain Davis. "I guess that's why it's raining. Looks like we'll paint some other day."

Painting on the boat is almost a never-ending proposition. As soon as everything's been given a fresh coat, it's almost time to start over again.

We pass the Querto Mining complex, on the Ohio side of the river, where a long conveyor belt snakes its way down to the river's edge. The belt was built to bring coal down for loading into waiting barges. On the West Virginia side, we pass yet another chemical plant, this one operated by PPG Industries. Built in 1943, it boasts a payroll of 820 employees and produces a wide range of products, including chlorine for water purification, calcium hypochlorite for swimming pool treatment, caustic for aluminum production, chlorobenzenes used in agricultural chemicals, and carbon disulfide that goes into the production of rayon.

The *Dick Harbison* passes, heading downriver with a tow of fifteen barges. Checking the *Inland River Record*, I find the *Harbison* is a triple-screw boat that, like the *Terese Marie*, has changed hands five times since it was built. The only difference is that the *Harbison* has been on the river for twenty years, compared with ten years for the *Terese Marie*. The current owner of the *Harbison*, the book says, is the Arkansas River Company of Greenville, Mississippi.

Just ahead is Clarington, Ohio, a prosperous boatbuilding community in the latter part of the nineteenth century. A population of 915 in 1890 quickly dropped to less than half that when the boatyards shut down operations.

In Benjamin F. Klein's wonderful potpourri, *The Ohio River Handbook*, there's an old photograph (circa 1912 or so) of the steamboat *Royal* at Clarington. Klein notes that the boat operated under three different names. First it was the *T.N. Barnsdale*, then it was renamed the *Royal* and, finally, the *Liberty*. It offered daily service to Wheeling, twenty-eight miles away, leaving Clarington each morning at 6:00 A.M. and returning in the afternoon. This made it convenient for people in the Clarington area to travel to Wheeling to shop, see a doctor, or whatever.

We press on and pass two more of American Electric Power's coal-fired power plants, first the giant Mitchell complex (capable of producing 1,600 megawatts of electricity), then the much smaller Kammer plant (rated at 630 megawatts).

When things are slow, Captain Davis likes to tune in country music on the radio. So at the moment we're listening to Billy Ray Cyrus sing away, telling us about his "Achy Breaky Heart."

"Did you see Billy Ray when he played down at the Ashland riverbank on July 4?" the captain asks. "There were so many boats on the river, you could have walked all the way across it and never got your feet wet."

Billy Ray is replaced by Loretta Lynn. "Ever go to her home place

down in Butcher Hollow?" asks Davis. "We went down there one time and got some real nice photographs while we were there."

Wilma arrives in the pilothouse with a pleasant midmorning surprise, a plate of homemade cinnamon rolls. They smell delicious. Sampling one, then another, I find they taste even better than they smell. Wonderful. So much for my worries about my waistline.

Since the crew can't do the painting that the captain had planned on, he sets two of the deckhands to work cleaning the pilothouse.

"You know, I think they must have changed the formula on this stuff," complains Davis, reading the label on a can of brass cleaner. "It just doesn't seem to do the job it used to."

Ahead, on the West Virginia bank, is the community of Moundsville, best known as the home of the West Virginia Penitentiary and for the curious mounds that provided its name. Generations of West Virginians called them "Indian mounds." Today, we know they were built by a civilization that flourished far earlier than the Native Americans encountered by the first white settlers who made their way into the Ohio Valley.

The Mound Builders lived in what we have christened the Stone Age—in prehistoric times when man used stone for most of his weapons and tools. They knew how to weave, and the women made cloth for clothing. They apparently smoked tobacco, for archaeologists have unearthed some of their stone pipes, beautifully carved and highly polished. They hunted with arrows and spears with stone tips and hatchets with heads of stone. And, much as the Egyptians built the giant stone pyramids to entomb their royalty, the Mound Builders raised great mounds of earth and in these laid their dead to rest.

A few years before the American Revolution, George Tomlinson founded a settlement twelve miles below the present city of Wheeling. He named it Grave Creek, because a large creek flowed into the Ohio River at this point, and the area abounded in burial mounds. Nearly a century later, the name was changed to Moundsville, and descendants of Tomlinson decided to explore a large burial mound on his property. It was a tremendous cone of earth, measuring eighty feet high and nine hundred feet around the base. Digging tunnels to the center of the mound, the diggers discovered two large rooms. They were burial chambers containing ancient skeletons and hundreds of ornaments—ivory beads, shells, cooper bracelets, and flakes of sparkling mica. These had been the honored dead of the Mound Builders.

This find, together with other discoveries in the Ohio Valley, led many to speculate on the people who built these giant mounds. Some said they were linked to an Asian race that had migrated across the Bering

Strait and that they had been wiped out by the Indians. (Of course, originally there was no strait of water there such as we know today; Asia and America were joined by land.) Others claimed they were the "Lost Tribes" told about in the Bible. No one really knows for sure. But this much we do know: Moundsville's Grave Creek Mound is one of the largest of its kind anywhere in the United States. Experts say it could be as much as three thousand years old.

Just upstream of Moundsville are three small West Virginia communities. Glen Dale (pop. 1,612) was incorporated in 1924 and named after "Glen Dale," the name of the Samuel A. Cockayne farm, upon which it was laid out. For many years, Glen Dale was home to a plant—long since defunct—where the Louis Marx Company produced tin windup toys enjoyed by generations of American youngsters. McMechen (pop. 2,130), incorporated in 1895, was named for its original settlers, William and Sidney (Johnson) McMechen. Originally chartered in 1853 and later incorporated in 1895, Benwood (pop. 1,669) was first called "Ben's Woods" because the land in question was owned by Benjamin McMechen.

And just ahead is Wheeling.

Some Wheeling History–and Legend

In 1740, a French explorer, Pierre-Joseph Celoron de Blainville, made his way down the Ohio River and stopped at the mouth of a creek which the Iroquois called Ranonourara and we know as Wheeling Creek. De Blainville claimed the site for France and marked that claim by burying a lead plate inscribed with the French royal seal, one of several such plates he would leave at various spots as he made his way downriver.

As the years passed, other pioneers came. But few dared remain, for their very lives were at stake. The Delaware Indians of the region were determined to hold on to their land and their way of life. Frequently they attacked and subdued intruders, then beheaded them and placed the severed heads on poles driven into the ground along the riverbank. The heads were left there to rot and serve as a warning to any others foolish enough to venture that way. Eventually the chief of the Delaware, a burly type named Big Cat, coined a name for this particular spot on the river. A simple and suitable name, to be sure. He called it "The Place of the Skulls." Finally, of course, the Indians were driven back, pioneers did settle the area, and eventually a thriving community grew up. But the new settlers, in a grim tribute to times past, retained the name. Only, they used Big Cat's original Indian word—Wheeling. (Many

historians scoff at this account of how Wheeling supposedly got its name, but the legend persists.)

Fort Henry was the forerunner of what is now the city of Wheeling. In 1769, Ebenezer Zane, his brothers, and other settlers cleared a tract of land near the mouth of Wheeling Creek and there built the first cabin in the region. Then they sent for their families and friends to join them. But, because of the Indian threat, the settlers soon were forced to build a fort for protection. Named Fort Fincastle (later Fort Henry) it consisted of a barracks and cabins, all enclosed by a stout log stockade. There were many Indian raids on the fort, all of them unsuccessful. When an attack came, the settlers hurried inside the fort. The men took up positions at loopholes, through which they could fire at the attacking Indians. The women busily reloaded the rifles—even melting the lead for new bullets—so the men could stay at their posts. Defeated time after time, the Indians eventually withdrew.

Fort Henry suffered its last major Indian attack some twenty-five years before it officially became the city of Wheeling. The American Revolution was over. But some three hundred Indians, along with some British soldiers who still hadn't heard about the surrender of General Cornwallis at Yorktown, laid siege to the frontier outpost. The garrison, under Ebenezer Zane's command, fought stubbornly, but by the second day was running desperately short of gunpowder. There was plenty more in a supply blockhouse, but that lay 150 yards from the fort and the space in between was a virtual no-man's-land. Several men volunteered to retrieve the powder, but Zane felt he needed every rifle possible to defend the fort. "Then I'll go," said young Betty Zane, who was visiting her brothers at the fort. "'Tis better a maid than a man should die," she said. So the gates of the fort were unbarred, and she ran for the blockhouse. The Indians were so taken aback by the sight of a woman rushing out of the fort that at first they forgot to fire at her, but when she started back with a load of powder in her apron she was greeted with a hail of bullets. Several shots pierced her clothes but, by some miracle, she remained unhurt—and saved the day. Or so it's said.

In the early days of West Virginia, a rugged type of wagon rolled over the National Road from the eastern seaboard to Wheeling. It was the Conestoga, a covered wagon, named after the Conestoga tribe of the Iroquois Indians, and made by German settlers in the Conestoga Valley of Pennsylvania. With their canvas tops and a six-horse teams, the Conestoga wagons were the very lifeline of frontier America, lumbering across mountain and meadow with cargoes weighing up to five tons. But it was a slow process. The Conestogas traveled at a rate of only three

to four miles an hour, thus the wagon drivers had plenty of time on their hands. One of their main pleasures was to smoke a long, thin cigar that was made especially for them by the cigar makers of Wheeling. The cigars came to be called, naturally enough, Conestoga cigars. But that was something of a mouthful to say, so before long the wagoners shortened it down to "stogie." Today, those old wagon drivers long since have gone to their reward. But the stogies they enjoyed so much are still around—and still made in Wheeling.

Captain Samuel Brady of Wellsburg hated Indians, and they seemed to feel much the same way about him. One day, Brady and a small group of soldiers were traveling along a trail that ran along Slippery Rock Creek, not far from Wheeling, when they noticed signs that there were Indians ahead. Quickening their pace, the group quickly caught up with the Indians, who were gathered around a campfire. But just as Brady and his men raised their rifles, ready to open fire on the seated Indians, they where hit by a hail of bullets—fired from somewhere behind them. It seems their trail had been picked up by another group of Indians, and so they now were surrounded. The only way out was to cross Slippery Rock Creek. But it was too deep to wade across and too wide to jump. Even so, Brady took a flying leap anyway and, to his amazement, cleared the creek and escaped. History doesn't tell us what happened to the men who were with him. The creek measured twenty-three feet across. Or so legend says. That's quite a jump.

But Brady's feat pales when compared with the famous leap of Major Samuel McColloch, another legendary figure in Wheeling area history. During a siege of Fort Henry, McColloch headed a relief force of forty mountaineer militiamen who rode to the fort's rescue. When they charged through the ranks of hostile Indians, the gates suddenly were thrown open, and in they rode—all, that is, except for McColloch. Somehow he had become separated from the rest of the group and forced up the steep slope of Wheeling Hill, with the Indians in hot pursuit behind him. Reaching the crest of the hill, the hapless McColloch found himself surrounded on three sides by Indians, who were ready to move in for the kill. The fourth side? A cliff, with a sheer drop of 150 feet down to the waters of Wheeling Creek. That's about the same height as a ten-story building. Riding off the cliff would be almost certain death. But the unpleasant alternative was to hang around and be scalped by the Indians. So, spurring his horse into a gallop, McColloch sailed over the edge of the cliff and into space. The next instant, both horse and rider splashed into the creek below. Miraculously unhurt, man and beast quickly scrambled to the safety of the fort, leaving behind the Indians, seething with rage. Or so the story says.

The Wheeling Suspension Bridge

As the *Blazer* nears Wheeling, bridges start coming thick and fast, one right after the other. First, at Mile 103, we come to the Moundsville highway bridge. Then, in a stretch of less than five miles, we encounter six more:

At Mile 94.5, the CSX Transportation railroad bridge.

At Mile 94, the Bellaire highway bridge.

At Mile 91.7, the Interstate 470 bridge.

At Mile 90,4, the Wheeling suspension bridge.

At Mile 90.3, the Interstate 70 bridge.

And at Mile 89, the Wheeling Terminal Railroad (Pennsylvania Railroad) bridge.

The older of these spans are worth more than passing notice. The CSX bridge, for instance, is a genuine masterpiece of nineteenth-century engineering. Designed by Wendell Bollman and Jacob Linville, it is made up of ten steel eye-bar spans extending 2,317 feet over the water. When it opened in 1871, this was the connecting link for the old Baltimore and Ohio Railroad between Baltimore, Maryland, and Columbus, Ohio. The stone piers in the river are blackened with smoke and age but have withstood the ravages of wind and water, summer and winter, for year after year. The steel truss spans, of course, have been replaced from time to time.

The Bellaire highway bridge, just three blocks north, is also an old, ornate span. Ditto the Wheeling Terminal bridge, which carried its last train in 1962 and is scheduled for demolition. But it's the Wheeling suspension bridge that is the region's most celebrated span. Indeed, the lore that surrounds this famous bridge is so considerable and colorful that it easily could fill an entire book all its own.

From its earliest days, Wheeling was a river town, and its wharf was always busy. Many of the town's first settlers arrived by flatboat. And, in later years, steamboats brought many new citizens, especially immigrants from Germany who made their way overland to Pittsburgh and then down the Ohio. Wheeling shipyards built many steamboats that would ply both the Ohio and the Mississippi, and, since the region was an iron-making center, local companies made boilers and other mechanical equipment for a number of boats that were built elsewhere. But, despite its river heritage, Wheeling presented a real headache for rivermen: its suspension bridge was only ninety-seven feet above the surface of the river, meaning that the typical three-deck steamboat was unable to clear it without taking down its stacks. And there was no way a four-deck boat could clear the bridge.

The Wheeling and Belmont Bridge Company had been granted a state charter to build the bridge based on the proviso that it not interfere with river traffic. When bids were invited on the project, two well-known bridge experts submitted proposals, both for suspension spans. One proposal was offered by John A. Roebling, who later would design the Cincinnati-Covington suspension bridge and, still later, the famed Brooklyn Bridge. The other came from Charles Ellet Jr., who would go on to erect a suspension bridge over Niagara Falls. Ellet won the contract, and in 1849 the Wheeling Wire Toll Suspension Bridge opened for traffic. At 1,010 feet from tower to tower, it was at that time the longest suspension bridge anywhere in the world.

The rivermen took their case against the bridge to court, contending that the low bridge forced them to shorten their smokestacks, thereby resulting in reduced speed. The case was argued back and forth for three years until the U.S. Supreme Court found in favor of the rivermen and ordered that it either be demolished or raised to permit the unimpeded passage of steamboats. At this point, however, Congress intervened, dictating that the bridge was a postal route and thus immune. By this time, most new steamboats were being built with hinged chimneys for negotiating through tight places.

But no one could have foreseen what happened next: the controversial bridge collapsed, blown down in a storm. In his *Wheeling: An Illustrated History,* Doug Fetherling quoted this eyewitness account of the bridge's 1854 collapse, as penned by a reporter for the *Wheeling Intelligencer:*

> We had been off the flooring only two minutes, and were on Main Street when we saw persons running toward the riverbank; we followed just in time to see the whole structure . . . lunging like a ship in a storm; at one time it rose to nearly the height of the tower, then fell, and twisted and writhed, and was dashed almost bottom upward. At last there seemed to be a determined twist along the entire span, about one half of the flooring being nearly reversed, and down went the immense structure from its dizzy height to the stream below, with an appalling crash and roar. [36]

Work started on rebuilding the span. At the same time, the rivermen began another round of legal proceedings, aimed at halting the work. Eventually, in 1856, the Supreme Court ruled again, this time endorsing the action of Congress and essentially reversing its earlier ruling, which had favored the rivermen.

Today, the rebuilt Wheeling bridge is the oldest major suspension bridge in the world. In 1975, it was declared a National Historic Civil Engineering Landmark.

Upstream from Wheeling

Leaving Wheeling behind, the *Blazer* soon nears the Pike Island Locks and Dam, located two miles upstream from Warwood, a suburb of Wheeling.

Captain Davis uses the radio to alert the dam's lockmaster of our impending arrival. The captain asks if there are any other boats in line ahead of us. The lockmaster replies: "There's nothing else around, so we'll be getting the big one ready for you"—a reference to the 1,200-foot lock chamber that is the larger of the facility's two.

Pike Island replaced obsolete Lock and Dams 10 and 11. With no other traffic and no need to break our tow into sections, locking through at Pike Island is only a matter of minutes. When we're again on our way, Captain Davis convenes everybody but Ronnie Burge and Wilma in the crew lounge for a mandatory safety meeting and a viewing of a videotape on firefighting.

At Mile 77 we pass another of American Electric's coal-fired power plants, the 600-megawatt Cardinal plant.

The Steubenville, Ohio, area boasts four more bridges—two for cars and two for trains. We negotiate all four with ease, but at Mile 66, Ronnie Burge tells the deckhands: "Hey, I felt something snap." And, sure enough, a quick check of the tow reveals that one of the wires has slipped. It's quickly tightened.

Incorporated in 1805, Steubenville was named for Baron Von Steuben, the Prussian general who volunteered to train George Washington's ragtag band of inexperienced soldiers at Valley Forge in the winter of 1778. For nearly a century now, the city has been a steelmaking center and, of course, has taken its lumps along with that troubled industry in recent years. Once the Wheeling-Pittsburgh Steel Company operated nine plants in Steubenville and other communities along a twenty-five-mile stretch of the Ohio and even had its own fleet of towboats and barges. Today, many of those plants are closed and the boats and barges long since sold. But the company has invested millions of dollars in its remaining plants and, officials insist, is on a rebound.

A mile or so more upstream and the Ohio makes one of the sharpest turns of its whole course—Cables Eddy, it's called.

"I'm gonna back up and be sure I make it," says Burge, playing things cautiously.

Ahead is Brown's Island. The river's channel lies between it and the West Virginia shore, which is home to the sprawling, noisy plant of Weirton Steel Corporation. Meanwhile, on the island, a herd of deer peacefully grazes at the river's edge, seemingly oblivious to all the noise and confusion on the other side of the river.

Weirton Steel and the town of Weirton both were built in 1909 by steel industry pioneer E.T. Weir. That makes it the "newest" city on the Ohio. The people of Weirton like to boast that their town is also the cleanest on the river, and certainly it's remarkably clean for a steel town.

Weirton Steel's huge, four-hundred-acre plant once employed more than thirteen thousand workers who turned out some of the finest steel and tin plate in the world. Over the years, thousands of coal barges would be unloaded at the plant's dock, while finished steel frequently was shipped out via special covered barges. But in the 1960s and 1970s the plant, like the steel industry itself, was being increasingly threatened by competition, especially from foreign steelmakers whose operations were heavily subsidized by their governments. In 1982, the old plant lost fifty million dollars, and its owner, National Steel, was said to be ready to write it off, either dramatically downsizing it or maybe shutting it down completely. Closing the plant would have devastated the Weirton community.

Determined to keep that from happening, Weirton's workers and its management—encouraged by Jay Rockefeller, who then was West Virginia governor and now represents the state in the U.S. Senate—proceeded to buy the plant themselves in what, at $366 million, was then the largest employee stock ownership plan (ESOP) in the country. The deal was worked out with the help of management consultants, whose fees were paid in part by the townspeople of Weirton (pop. 28,000) who used everything from sock hops to telethons to bake sales to raise the money that was needed.

Weirton's workers took sharp cuts in their pay to make the plant competitive and eventually some of them lost their jobs when declining sales forced cuts in production. Today's payroll of 6,200 workers is roughly half the number of people who once worked at the mill. Yet, Weirton Steel is the largest employer in West Virginia, and, even though the recent road has been sometimes bumpy, most consider the employee buyout of the troubled steelmaker a success.

It's now 1620 hours, Captain Davis has taken over the helm, relieving Ronnie Burge. The captain talks to the New Cumberland Locks and Dam to announce our arrival and gets an all-clear.

On the radio, a mournful Elvis sings about "Kentucky Rain."

Located at Stratton, Ohio (pop. 278) the New Cumberland Locks and Dam is just upstream from (naturally enough) New Cumberland, West Virginia, which has a population of 1,752. Dedicated in 1961, this was the first completed element in the postwar modernization of the river. Built at a cost of $39.1 million, it replaced three obsolete locks and dams.

Its two parallel locks, one of them 1,200 feet long and the other one 600, became the standard for the river's newer locks and dams.

We lock through New Cumberland in short order. Once again, with no other boat ahead of us and no need to break our tow into sections, it takes only a matter of minutes, rather than hours.

As the *Blazer* leaves the lock, heading upriver, we encounter the Ohio River Company's *John Ladd Dean*, heading downriver.

At 1830 hours, we arrive at Wellsville, Ohio, and tie up there. Founded in 1795 by William Wells, Wellsville is the closest point on the Ohio to Lake Erie and in 1852 became the terminus for the first railroad to link the river and the lake.

We proceed to break two barges, the LC-42 and the AO-16, out of the tow, a process that takes the better part of an hour. We then depart with just these two, leaving the other barges behind. A light rain is falling as, twenty minutes or so upstream, we drop off—or "spot" in river talk—the LC-42 at the Quaker State Oil refinery dock at Congo, West Virginia. Off again, we head a bit farther up the river, to East Liverpool, Ohio, where we spot the AO-16.

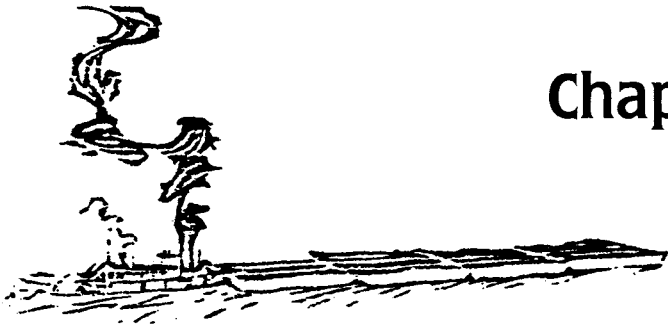
Vast deposits of clay, flint, and fieldspar located conveniently nearby, along with ample supplies of natural gas, made East Liverpool the pottery center of America. Founded in 1798 by Thomas Fawcett as St. Clair, it was later known as Fawcettstown. An influx of English potters brought its renaming as Liverpool, with the "East" later added to distinguish it from the other town, since disappeared.

After we've left the AO-16, it's back down the river to Wellsville to again pick up the remainder of the tow where we left it moored. (Rivermen know the location of mooring spots up and down the river, but, in a pinch, barges can always be tied to a big tree.) Along the way we pass Newell, West Virginia, which, like East Liverpool, long has been known for its pottery and china.

Newell is home to the Homer Laughlin China Company, which bills itself as the biggest maker of china in this country. Founded in 1871 by brothers Homer and Shakespeare Laughlin, it employed as many as 3,600 people in the years just before World War II. Today's workforce numbers roughly 900 employees, who turn out 30 million plates, bowls, cups, and saucers every year, including custom-made patterns for many of the world's finest restaurants and hotels. Surely the company's best known design is its colorful Art-Deco-style "Fiesta" pattern which was enormously popular in this country in the 1940s and 1950s and now is being reissued. Since 1989, Newell has spent eight million dollars on new production equipment—shaping machines, glaze

sprayers, and high-tech kilns that reduce firing time from a day to an hour.

Arriving at Wellsville, we rearrange the seven remaining barges—a process that takes forty minutes or so—and then we depart northbound. Shortly, at Mile 40, the river leaves West Virginia and Ohio behind, and we cross the state line into Pennsylvania.



Chapter 10

Napoleon said, "An army travels on its stomach."

So does a towboat.

Nobody would mistake the food served at a towboat dining table with the kind of fancy fare found on the menu of some five-star restaurant. It's your basic, down-home country cooking. But it's tasty. And goodness knows it's plentiful.

Here's a rundown of one day's meals on the *Paul Blazer*:

For breakfast, there's eggs, cooked any way you want them. Bacon, sausage, and ham. Stewed apples. Biscuits. Sausage gravy. Orange juice and grapefruit juice. And, of course, coffee.

On the river, lunch is traditionally the big meal of the day. A typical lunch features cube steak, mashed potatoes and gravy, creamed broccoli, green beans and corn, sliced tomatoes and cucumbers, and biscuits. You can drink iced tea, coffee, milk, or Kool-Aid. And for dessert there's strawberry shortcake or ice cream or watermelon—or all three, if you've still got room for it.

That night there's hot dogs, baked beans, and fried onion rings. Plus some leftovers from lunch, including the desserts.

Keeping the crew of the *Blazer* fed is the job of cook Wilma Parker. Like the two Ronnies, Wilma was born in Carter County, Kentucky, and still calls it home, living on the farm that she and her husband worked until his death. A mother of six—four boys, two girls—Wilma just turned sixty but hardly looks it. Lean and trim, she's a bundle of energy. She has to be. Keeping a boatload of hungry men fed is a tough task, one that requires her to be up long before sunrise and keeps her busy long after dark.

Three of Wilma's sons, as well as a grandson, work on various boats in the Ashland Oil fleet. In fact, she says she applied for the cook position at the urging of one of her sons, who told her, "Mom, if you can cook soup beans and fried potatoes, that's what they want."

Once hired, Wilma quickly learned her son was right: "I fixed sweet and sour pork one time and the men just sat there at the table and looked at it. 'What's that?' somebody asked. I never fixed that again."

"There's no way I can cook everybody's favorite food at every meal," she says. "But at different times on a trip I try to fix something that I know each person likes."

I ask Wilma to tell me about what it's like to be a riverboat cook—and a little of her own story.

"I went to work first on the old *Aetna-Louisville.* Ronnie Davis was on there, but he wasn't a captain then. The captain was Gene Dent. A fine man. He's retired now and lives in Florida. Then, when this boat was built, I came to it.

"Paul Ivy, he's the cook on our other crew now. He trained me on the *Aetna-Louisville.* When I got on the boat he was a lot of help to me. He'd show me one thing at a time. He didn't just dump everything on you. He told me, `Wilma, if I'd shown you all this at once, you'd have run for sure.' And he's right. I probably would have. I started on a Saturday morning, and he stayed with me till the next Friday. But on Tuesday he turned me loose. He said I was on my own—but he'd be in the lounge if something came up and I needed him."

So what's a typical day for a cook working on a towboat like the *Blazer*?

"I get up about 3:30 every morning, and the first thing I want is a cup of coffee. Sometimes I slip down here to the galley in my sock feet and get a cup to take back to my room. By 4:00 A.M. I've started for the day. I prepare breakfast. Then, just as soon as you get breakfast over, you're thinking about what you're gonna fix for lunch. Even though it don't take all that time between breakfast and lunch, you're still busy preparing stuff. After lunch, I have a little break—until four o'clock—and it's time for the evening meal. Then, after seven, my time is free until the next morning at 3:30, and it starts all over again."

Like the rest of the crew, Wilma works for thirty days straight, then has thirty days off until reporting back for work again.

With only a bit of persuading, she agrees to take me on a tour of her galley, an expanse of stainless steel that would cause many a cook's eyes to light up with envy. One by one she opens up the doors of various coolers and lockers to reveal an incredible array of food items.

A peek in the large refrigerator reveals pickles, ketchup, mayonnaise, grapefruit juice, baker's chocolate, orange juice, and other items. One locker holds potatoes and cartons of eggs. Another is devoted to produce: cabbage, lettuce, tomatoes, celery, carrots. A third holds more

brands and types of margarine and cheese than you count, along with milk and buttermilk.

"Some of the crew don't drink milk and some do, so the amount I get depends on who we have on board," Wilma explains. "But generally we get around fifteen gallons a trip. If we run low—and sometimes we do—the captain will put somebody off to get us some. We're never without milk."

"Now here in the freezer," Wilma says as she opens yet another door, "is your chicken. There's your T-bones and your ham. And there's ice cream and french fries in this part here. Sausage and bacon. Pork chops and spare ribs. Hamburger, beef roast, and cube steak. Hot dogs and lunch meat."

The inventory continues, as more doors are opened. Bread and rolls. Oatmeal and grits. Crackers and peanut butter. Puddings and cake mixes. Spaghetti and noodles and taco shells.

On the galley counter is a microwave, a food processor, and a mixer. Near at hand is a deep fryer. And, of course, the oven is king-sized.

"I see you've got a nice dishwasher," I say. "No," says Wilma, trying hard not to laugh at me. "That's a sterilizer. We do the dishes by hand, then run them through there. I clean up my dishes, but the boys, they shine the cabinets, do the mopping, and take care of the garbage."

Just off the galley is a pantry, which seems as well-stocked as a small grocery store. I notice a case of black-eyed peas. "Paul must have ordered those," she says. "I don't know why. Nobody will eat 'em." There's box after box of aluminum foil. At least a dozen. Maybe two. Tucked in a corner is a trash compactor.

Wilma's outfit today is typical of what she wears aboard the boat—blue jeans, a knit top and, on her feet, a surprisingly girlish-looking pair of pink and white tennis shoes sporting the "LA Gear" logo.

When she's not working, she loves to take care of her grandchildren (nine at last count) and play bingo. "I don't win much, but I have a lot of fun." While on the river, she spends her free time watching TV—soap operas in the afternoon and *Wheel of Fortune* at night. Sometimes she enjoys sitting out on the deck in an aluminum lounge chair that the crew bought for her.

She talks about her late husband, Elisha Martin Parker, known to his friends and family as "E.M."

"He went to Cleveland to look for work and found a job at the Murray bicycle plant there. And so we lived up there for four or five years. But his dad died, and he had a grandmother who was like a mother to him; she had raised him from the time he was two years old. So we moved back to Kentucky.

"He went to the railroad [CSX] and applied for work and they said all they had an opening for was a crane operator. He said, `Why, I can run a crane.' But he really couldn't. When he got in the crane, he told 'em it was a different type from what he had been using. `You'll have to show me a bit how to operate it,' he said. They did and from then on he was a crane operator.

"Between layoffs, he worked there on and off for fifteen years. It was January in 1978 when he died, and I went to work for the railroad almost exactly a year later, in January of 1979. I had written the manager a letter and told him I needed work. He told me I couldn't do much without a high school diploma. So I got my GED, and they put me to work that same day.

"I worked as a laborer. Cleaning leftover coal from the bottom of hopper cars. In the winter the coal would freeze to the bottom of the cars. Sometimes we'd have to build big fires under the cars to heat it up so we could get it out."

When CSX laid her off, Wilma started looking for other work. That's when her son suggested she try her hand as a cook on the river.

"It takes a different breed," she says, explaining that not everybody who tries working on the river is cut out for it. Many work a bit and then return to a shore job. But some, like Wilma, find they like it and stay.

"I had a chance to go back to the railroad but turned it down for this," she says. "I would have made more money at the railroad but, like I told them, I was satisfied here. Besides, I figure if I had gone back, it wouldn't have been long before they laid me off again."

Wilma has a ready laugh, and there's a twinkle in her eye when she tells me: "You know, the captain has the brains. The engineer sees that everything works just right. But it's the cook that's the backbone of the boat."

Judging from what I saw on the *Blazer*, I'd say she's right.

From Steam to Diesel

Just as Wilma Parker is in unquestioned charge of the galley on the *Blazer*, engineer Steve Bellomy rules the engine room, where the boat's two Cat diesels throb away.

The early packetboats burned either coal or wood, depending on what was available. Coal was always cheaper and more efficient but couldn't always be found, especially on the lower part of the Ohio.

As R.E. Banta notes in *The Ohio*, wood was twice as expensive as coal but had the big advantage of being readily available: "In 1827 . . . $1.50 worth of Pittsburgh coal (12.5 bushels at 12 cents per bushel) produced

power equal to that from a cord of hickory wood sold currently along the river at $2.87, but coal was not then offered for sale on the lower river and the high freight rates made it poor economy to load a packet boat with coal enough for a long trip when small quantities of wood could be taken on at short intervals and a greater payload carried—such were those carefree days of superabundance of natural resources" (498-99).

The first steamboat on the Ohio, the *New Orleans*, burned coal for at least part of its voyage. It's known to have picked up some at a spot just south of Louisville, and it seems likely it had burned coal for at least part, if not all, of its downriver journey to that spot. But coal wouldn't come into general use on the river, especially on the lower part, until shortly before the Civil War. In the postwar years, coal increasingly was favored as a fuel, and by 1880 it had, for all practical purposes, supplanted wood.

The *W.P. Snyder Jr.*, berthed at Marietta's Ohio River Museum, is, of course, a far cry from those earliest steamboats. Nevertheless, a look at its 1918-vintage engine room is a good example of steam power afloat.

Any steam engine is basically quite simple. It's a cylinder, inside of which a piston moves back and forth in a reciprocating motion. The piston is attached to a piston rod so that it moves back and forth with the piston. The piston rod, in turn, is attached to whatever needs to be moved.

As Stephen Joseph Vekich notes in his "*W.P. Snyder* Information Booklet," a helpful publication sold at the Ohio River Museum gift shop, the *Snyder* in fact has several steam engines aboard, used to operate pumps, wind capstans, and even turn the rudder. But in the case of the main engines, which we're primarily concerned with, the piston rod is connected to a long beam called a Pitman by means of a crosshead. It's similar to the connecting rod on a steam locomotive. It's attached to the paddlewheel crank which turns the paddlewheel.

Steam has two properties which steam engines such as those on the *Snyder* utilize. When water is boiled, the steam produced occupies a space that's 1,670 times greater than the space occupied by the water that made it. Heat that steam even more and it will continue to expand. Confining it in a relatively small space, then, creates a great deal of pressure. When steam cools and condenses back to water, the opposite is true: its volume reverses, creating a vacuum.

When steam is produced in the boilers on the *Snyder*, the steam is confined until the pressure reaches about 225 pounds per square inch. When released into the engines, it expands, pushing the pistons with a great deal of force. Then, when the steam leaves the engine, it goes to the condenser where it passes over tubes full of cold river water. The steam

condenses, creating a vacuum which pulls on the steam leaving the engine. So on one side of the piston, the expanding steam pushes while on the other the vacuum pulls, giving the engine much more power than it would had it relied solely on the steam pushing the piston.

"This," notes Vekich, "is also more efficient since the condensed steam, or condensate, can be used as feedwater for the boiler. Not only is the water recycled, but the condensate is already hot and will require less heat in the boilers to change it back into steam."

The diesel engine drove the steamboat from the river—and replaced the old chugging steam locomotive on the nation's railroads tracks—for essentially the same reason that coal supplanted wood as a fuel for steam engines. It was cheaper and more efficient.

Rudolf Diesel, the German engineer noted for his work on the oil-fuel engine that bears his name, was born in Paris on March 18, 1858, and drowned in the English channel on September 29, 1913. Diesel spent his early years in Paris and later studied engineering at Augsburg and Munich. Having learned that the thermal efficiency of an internal combustion engine was very low, he was inspired to conduct a series of experiments in an effort to raise that efficiency and thus reduce operating costs. He was convinced that compressing the air in the cylinder to a greater extent than was customary at the time would produce a temperature high enough to ignite the fuel introduced and no fuel-ignition equipment would be required. After four years of work in Augsburg, he completed his first engine of this design in 1897. The success of this 25-horsepower, four-stroke, single-cylinder engine attracted immediate worldwide attention.

Today, the diesel engine is the predominant source of industrial power throughout the world for units up to about 5,000 horsepower, principally because it can burn a low-grade fuel at a lower rate of consumption per horsepower per hour, thus producing cheaper power than other internal combustion engines or steam engines. Diesel-powered, twin-screw towboats began appearing on the Ohio in the 1930s and, once World War II was over and new civilian craft could be built again, quickly consigned the steam-powered sternwheelers to history.

When Ashland Oil undertook to build the *Blazer*—and her sister ships, the *Valvoline* and the *SuperAmerica*—it specified a new model engine, the 3606TA, by Caterpillar, long a maker of engines and equipment for use on both land and water.

Caterpillar dates back to 1904 when a Stockton, California, combine maker by the name of Benjamin Holt modified the farming tractor by substituting a gas engine for steam and replacing iron wheels with crawler

tracks. This improved the tractor's mobility over dirt by making it lighter and distributing its weight more evenly.

In 1915, the British adapted this "caterpillar" (a company-given nickname) design to the armored tank. Following World War I, the U.S. Army donated tanks to local governments for use in construction work. Their efficiency surprised Holt and spurred the development of earthmoving and construction equipment.

In 1925, Holt merged with another California manufacturer, the CL Best Gas Traction Company. The new company, named Caterpillar, moved to Peoria, Illinois, where it's still headquartered. In 1928, Caterpillar management decided that it could lower its customers' operating costs if it powered its machinery with Diesel engines. Development work began that year, and the company's first Diesel engine debuted in 1931. In the months that followed, requests poured in for "surplus" engines to power irrigation pumps, rock crushers, steam shovels, and fishing boats. In 1935, Caterpillar introduced its first "non-captive" engine, one that was larger than required for any of its agricultural or construction machines. By 1939, the Caterpillar line included generator sets, marine propulsion units, and truck engines. A separate engine division was formed in 1960.

When Caterpillar was formed in 1925, its sales were $13.8 million a year. Its 1992 sales totaled $10.2 billion, with its engine division accounting for nearly 30 percent of that figure.

Caterpillar marine sales are handled by local dealers. In the case of Ashland Oil, that was Whayne Power Systems. Brad Peterson, a spokesman for Caterpillar's engine division explains: "Dealers prefer to meet with the owner when he starts his project for a new boat. The dealer will make sure the customer receives the proper engine to do the job, and will work out a service plan to fit in the company's operating schedule."

A 1991 article in *Working on the Water*, a quarterly newsletter published by Caterpillar for its marine customers, is, as might be expected, a far-from-subtle sales pitch for the Cat engines used on the three Ashland Oil towboats. But the article nonetheless also offers a good look at the demands placed on a towboat's power plant.

Ashland Oil, the article notes, "made a commitment to improve barge-pushing efficiency on the locked upper Ohio River by building three new state-of-the-art 150-foot vessels. To power the *Valvoline,* the *Paul G. Blazer* and the *SuperAmerica,* they specified Caterpillar's new 2,100-horsepower 3606TA engines. Of course, on the river newer doesn't necessarily mean better. Long continuous run times and variable loads—from idling inside locks to pushing 22,000 tons full-bore upstream—make life

tough for propulsion engines. Now, armed with 26,000 to 30,000 hours of records on three sets of engines, Ashland is proving they made the right decision."

Whayne Power Systems guaranteed set levels of fuel and lube consumption for the engines as part of the purchase agreement. To monitor consumption levels, flow meters were permanently installed on each of the three boats.

The Caterpillar newsletter quotes Bob Johnson, assistant manager of fleet operations for Ashland, as saying that initial test figures "met or were better than the guaranteed results. In fact, oil consumption was so low, we were concerned about premature cylinder wear. We were used to seeing 15 gallons per day consumption with our other engines, and the new Cat engines were using only one gallon per day. After pulling pistons and inspecting several liners, we're no longer concerned about premature wear. . . .These three vessels have more than replaced our older boats. We've increased productivity 30 percent and cut fuel and oil consumption more than 20 percent per ton/mile at the same time."

Brad Peterson notes that in 1986, when the 3606TA engines were sold, they were rated as producing 2,100 horsepower. Since then, he says, the engine was uprated to 2,320 horsepower.

On the *Blazer*, keeping those engines operating at peak efficiency is the responsibility of the boat's engineer, Steve Bellomy.

Steve Bellomy's Story

Mugs of steaming coffee in front of us, Steve and I are seated at the dining table of the *Blazer*.

As engineer, he is responsible not only for the boat's powerplant but for everything aboard that's mechanical. He must know how to repair most anything that breaks so it can be fixed as quickly as possible. Time is money on the river.

Tall and lanky in appearance, Steve is wearing his customary outfit—jeans and a denim shirt. The shirt is unbuttoned down the front and the sleeves have been cut off at the shoulder, making it look more like a vest than a shirt. The rest of the *Blazer* may be air-conditioned, but it gets mighty hot in the engine room.

Steve doesn't talk much, but when he does he has a ready wit. Sometimes it's hard to tell when he's serious or joking, but a twinkle in his eye gives him away.

If you were casting one of those World War II combat movies, where Hollywood turned every fighting unit into a geographic cross section of the country, Steve would be a perfect "Tex." He may have been born in

Ohio, but he's a first cousin to the Marlboro man. And in talking we find we have at least one thing in common—we're both big John Wayne fans.

I ask him what prompted him to take up the river life.

"I've worked out here three different times," he says. "I've been with Ashland Oil about twelve years this time. I first came out here in 1966 after I was discharged from the Navy. I was young and what you might call free-spirited. I stayed two or three years and quit. A couple of years after that I was back again. I worked a total of four yours, and then I took a long stretch—"

I interrupt and ask him to start earlier, telling me where he was born and so forth.

"I was born in Portsmouth, Ohio. I'm forty-six years old. Very close to forty-seven, I guess. I went to Northwest High School in Scioto County, just outside Portsmouth. When I graduated from high school, I went in the navy and stayed there three and a half years. I was seventeen when I went in, so I got a break on my discharge. In those days they had a program like that.

"I got out of the navy, and within a month I was working on the towboats for Ashland Oil. The *Aetna-Louisville* was the first boat I was on.

"Ronnie Davis and I were hired the very same day, would you believe that? He's stayed out here all this time, of course. But, like I said before, I left—twice. The second time I quit I had plans to marry. Jobs were plentiful in those days, the 1960s and '70s, so I had no problem finding one. I went to work at a steel mill in Portsmouth.

"Well, that job lasted almost eleven years. That's how long I was off the river. The mill closed up, and I needed to find another job.

"Working on the water had always fascinated me. I worked on a tugboat when I was in the navy. That was at Pearl Harbor. I spent two years there. If it can get in your blood, I think it must have gotten in mine, because after the mill closed I traveled around, seeking a river job. All the time that I was working at the steel mill, I still was fascinated by the river. I would hear the boats out on the river, and I'd drive over to the bank and watch 'em.

"Well, I came upon an application for Ashland Oil, and I sent it in, so that's how I ended up back out here.

"That was in 1980. I went to work on the *Ashland*. It's still in operation. I went to New Orleans with Captain Willard White. I wasn't engineer then, you understand. I was a striker. You spend most of your time on deck and spend extra time in the engine room.

"I put in about three trips at that. Then I was fortunate enough to get an apprentice engineer's job. I traveled around from one boat to another, doing repair jobs and this and that. More or less just filling in. They put

you on every job they have where there's anything broke down or tore up. That's so you can gain whatever knowledge there is available.

"Ashland Oil started building these new boats in 1987. I was on the *Valvoline* at the time. It was an older boat, and it was to be the first one replaced. So they sent me down to Houma, Louisiana, where the new boats were being built and I went through the shipbuilding process down there. I got involved while the boat was in the building stages. I got to see it while it was being roughed in, with the piping, the machinery, and such as that. All of which was quite advantageous. You see things that you can't see later after they're covered up.

"After the first boat was out for a few months, they built this boat and they asked me to come over here to it. The chief engineer was near retirement. And so here I am today.

"Ronnie was relief captain when I came on the boat. Gene Dent had been captain on the *Aetna-Louisville.* So they replaced it with this boat and he came over here. He's retired since, of course."

I note that many of the young men working on the *Blazer* seem to be simply biding their time, waiting until they can find something better. Steve's attitude, I suggest, seems different.

"Exactly," he says. "I see that myself, of course. I could have had a job working for Ashland Oil on the bank, at the repair facility. But, comparing the two jobs, the one they offered me and the one I have now, I would do the same thing again. I'd stay here.

"The thirty days on is very hard. It's a strange way of life. A lot of people can't do it. Some wouldn't even attempt it. But to me, the nostalgia and everything building up to this is important.

"I even read steamboat books, you see . . . "

He holds up the paperback he's been reading. It's a copy of *Always a River: The Ohio River and the American Experience,* a collection of essays on the river and its history.

"Yesterday's steamers and packetboats may be somewhat glorified." Steve says, thumbing the paperback's pages.

"This seems just a workaday situation here, of course. But there are no more packetboats. If I want to work on the river, this is it. So I am where I am. Taking what's available. And getting paid, of course. First things first, mind you. I need that check just like everyone else."

So, I ask, what do you when you're not working? What do you do when with your thirty days off?

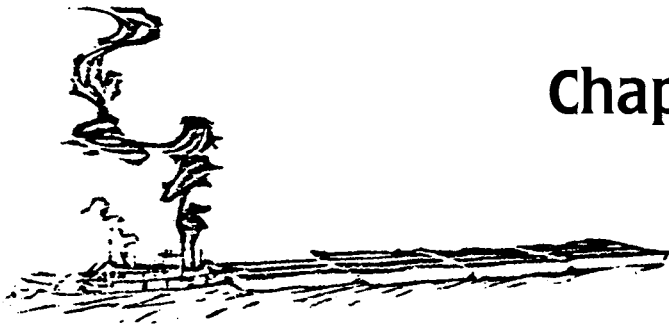
"Relaxation is what everyone tries to get plenty of when they're off. But I find a bit of boredom sets in with me after I relax for a bit. I'm an amateur carpenter and woodworker of sorts, so I spend a lot of time at

that. And, when possible, we travel a little, for I am free and clear for the thirty days. My wife, Joyce, has a job with the school system, so when she also has free time we try to take advantage of that. The kids are grown.

"I have a daughter, Tracy, that's married. She has a young son, Jacob Paul, who's about five months old now. She calls him Little Jake. Her husband works at a small welding shop in North Portsmouth. They're just getting started in life.

"My son, Christopher, he joined the navy. Right now, he's on a landing craft out of San Diego. He only has a few more months to serve. He'll be in come November or December. He's made the trip back home a few times since he's been in. It's an experience for anybody. I experienced it myself. And I was glad to see him sign up. College wasn't in his plans, so there was a big void there. I don't know what he might try to get into when he gets out.

"The river? I don't know. That's up to him."



Chapter 11

It's Tuesday morning and again it's decision time. To shave or not to shave? I study my face in the mirror for a minute or so. Shucks, I decide, I'm on vacation. Why should a man who's on vacation have to worry about shaving? After a quick breakfast, I make my way to the pilothouse, where I greet Ronnie Burge, who's just finishing his watch. Just then Captain Davis makes his entrance, ready to relieve the pilot.

"Well, what do you say now, fellows?" he asks.

I check the log and chartbook to see what kind of progress the *Blazer* made overnight. The chart shows that it's now Pennsylvania on both sides of the river. The log indicates that at 0035 hours we tied off at the Ashland Oil dock near the town of Midland to pick up a barge—the AO-422, loaded with twenty thousand barrels of diesel fuel. At 0220, having added the additional barge to the tow, we departed northbound, with seven loaded barges in tow. We made our way under the Midland-Shippingport highway bridge and past the Shippingport power plant, the world's first full-scale nuclear power plant. Within the hour, we arrive at the Montgomery Locks and Dam. Located at Mile 31.7, Montgomery Locks and Dam was originally built in 1936 and replaced old Locks and Dams 4, 5, and 6, which dated back to the years 1892 to 1908. A $24.2 million modernization—"rehabilitation" is the word the Corps of Engineers likes to use for such work—was completed in 1989. Even so, it's still a small lock and we had to break the tow into two sections, so it was 0510 before we were on our way again.

Even after the Gallipolis bottleneck is alleviated, three locks and dams in the Pittsburgh district—Montgomery, Dashields, and Emsworth—still will have main locks that are only six hundred feet long, the same dimension as the larger of the two locks at Gallipolis. Even though the Corps of Engineers is spending $100 million to "rehabilitate" the three, that doesn't include new, larger locks. Instead, the Corps is concentrating on upgrading the locks and dams on the Monongahela River because the structures there are much older and more antiquated.

In addition, double-locking at the Pittsburgh district dams isn't required nearly as frequently as at Gallipolis. A boat such as the *Blazer* may head upriver with a long tow, but, by the time it drops off barges enroute, the tow is much smaller when it reaches Pittsburgh. Thus, last night's double-locking at Montgomery was something of an exception to the rule.

As usual, the watch is changing for the morning when I arrive at the pilothouse. No sooner has the captain relieved Ronnie Burge—and I've taken up my customary seat at his right—than we encounter a southbound boat at the Vanport highway bridge, which links the town of Vanport, on the river's north bank, with Bellowsville, on the south. There's only room for one boat in the channel here, and, since southbound craft always have the right-of-way, we must come to a halt for ten minutes to let the other boat make its way by.

In the next two miles of river, we must negotiate three more bridges—the Pittsburgh and Lake Erie Railroad bridge, the Rochester-Monaca highway bridge, and the Monaca-East Rochester highway bridge—but we manage to do so without an additional delay.

At 0635 we arrive at Freedom, where we tie off the tow so we can deliver two barges—the AO-121 to Ashland Oil's distribution center at Freedom and the C-235 to the nearby Conrail rail yards at Conway. We leave the tow on the bank opposite the Freedom dock.

"There used to be a refinery here at Freedom, but they tore it all out about a year ago," Captain Davis says. "Now they just store products here."

"Why are we tying off on the opposite bank?" I ask. "That doesn't seem logical to me."

"It's just easier to do it that way," he replies. "It's simple to pull the one barge out of the tied-off tow and run it over to the bank where the dock is. If we were at the dock with the whole tow we wouldn't have any room to work loose the barge we want."

It takes fifteen minutes to dock the AO-121 at Freedom, then it's back to the tow to pick up the second barge, the C-235, bound for Conrail.

We leave deckhand Dorsey McGlone on the tow to keep an eye on it. We didn't have to leave anybody aboard when we left to cross the river to the Freedom dock because we still had the tow in sight. But shuttling the second barge to Conway will leave the tow out of view, so somebody must be left behind. Dorsey gets the job—not one that's enjoyed by any of the men.

Dorsey, customarily clad in bib overalls and a baseball-style cap with a Redman Chewing Tobacco logo on it, is a good deal older than the other deckhands, most of whom are hardly more than teenagers. When

I mention that to Captain Davis, he confirms my suspicion that it's fairly unusual to see someone Dorsey's age working as a deckhand. "It's a young man's job out there on those barges," he says.

In the pilothouse, country music star Kathy Mattea is singing away on the radio. It's one of her biggest hits, "Eighteen Wheels and a Dozen Roses," a ditty about the truckers who guide their big rigs along the nation's interstate highways, mile after mile, year after year. It occurs to me that somebody could write a similar tune about Dorsey and the other hardworking men who wrestle barges up and down the Ohio.

While we've been nearing the Conrail dock, Captain Davis has been working the phone, trying unsuccessfully to raise somebody at Conway to accept the barge we're shoving. We arrive at the dock, and he's still had no luck finding anyone.

"Well, here we are with no dockman to accept the load," the captain complains. "There's nobody in the office. I tried one number I had here, and the fellow's wife said he was on sick leave. I tried another number and found it had been disconnected. Now what?"

While the captain continues to grumble, a man appears on shore and wordlessly watches as the *Blazer* crew ties up the barge, hooks up the big hose, and starts the pump that will empty it.

Captain Davis is still in a complaining mood.

"Look at that guy just stand there. We're supposed to help, not do it all. There's where some people take advantage."

At 0855 we depart, lightboat (without barges), and fifteen minutes later are back at the tow we left on the bank opposite the Freedom dock. Minus the two barges that we've delivered, the tow now must be totally reconfigured, a process that takes ninety minutes or so.

While jockeying the barges into their new positions, Captain Davis calls the Ashland Oil wirehouse in Catlettsburg and asks that a case of frozen orange juice be added to the boat's next grocery order. (It's called a "wirehouse" rather than a warehouse because the many items stored there include the lengths of wire used to couple barges.)

"And can I get two pike poles and a couple of cases of batteries without giving you the deed to my ranch?" he asks.

A pike pole, sometimes called a spike pole, is a long pole with a hook on one end, used for pulling in a line or other object that is out of reach. They're also often marked and used for measuring water depth. Apparently they're a bit like umbrellas, in that you never know when you will need one—and you're always going off and leaving them somewhere. The batteries are for the two-way radios used by the deck crew to communicate with the pilothouse. They use up batteries at a rapid rate.

On our way again, we pass the town of Ambridge, founded in 1903

when the giant American Bridge Company plant was built there. A subsidiary of U.S. Steel, American Bridge over the years supplied steel not only for a host of bridges, large and small, across the nation but also for such skyscrapers as the Empire State Building and the Chrysler Building.

Ambridge stands on the site of the old town of Economy, founded by religious zealot George Rapp. A Lutheran minister, Rapp came to this country from his native Germany in 1803 and gathered around him a congregation of several hundred followers. Originally, the group had a settlement near where the Beaver River flows into the Ohio but later picked up stakes and moved to Indiana. Unhappy there, Rapp and his band moved back to Pennsylvania, founding the community of Economy. But by the time of Rapp's death in 1847, the group was rapidly diminishing in number—a logical development given that one of the virtues Rapp preached was celibacy. With the last members gone to their reward, a trustee was only too happy to settle the real estate left behind to American Bridge for its mill.

American Bridge once was the largest steel-fabricating facility in the nation—perhaps the largest anywhere in the world. During World War II, when it was kept busy night and day, it employed as many as four thousand workers. It closed in 1984.

At 1200 the watch changes, and it's again Ronnie Burge's turn at the helm. As he settles in for his six-hour shift, he has no idea that it's going to bring him and the *Blazer* within inches of a tragedy.

Ronnie and the River

Like life in the military, life on the river often seems a matter of "hurry up and wait." Periods of busy, almost frantic, action are followed by long stretches when time hangs heavy on your hands.

Ronnie Burge has been at the helm only ten minutes before we arrive at the Dashields Lock and Dam. Another boat is already locking through, so we have no choice but to come to a halt and wait our turn.

Located at Mile 13.3, Dashields was built in 1929 to replace Dam 3, which was built in the years from 1899 to 1907.

Time passes slowly. I ask Burge if he's willing to use the time to answer a few questions for me. He reluctantly agrees. I sense that he's not accustomed to talking about himself and isn't very enthusiastic about it.

For openers, I ask him how long he's been on the river.

"This coming September it will be twenty years."

When you started out, I ask, did you think you would still be out here twenty years later?

"No, I sure didn't."

So, I say, tell me how you got that first job.

"Well, there wasn't much to do where I lived. I knew Ronnie Davis and some other boys who worked on the river. So I decided I'd give it a try and, during my thirty days off, I'd look for other jobs, but I just couldn't find anything that paid any money. So I just hung around, and here I am.

"I've been a pilot now for twelve years, or pretty close to it. I started as a deckhand, of course. It was six and a half years before I started steering any. They needed a pilot on the *Valvoline*, so they thought they'd give me a try. You're supposed to steer for one year, then you can try for your license. The first time I tried, I failed. It's a pretty hard test. I was nervous, and I didn't really have all the stuff I needed to study. I had to wait thirty days and try it again. So it was something like a year and two months before I got my license.

"I took my test in Huntington, but you can't do that now. You have to go to Memphis.

"I've worked on the *Valvoline*, the *Allied-Ashland*, the *Aetna-Louisville*, the *Tri-State*, and the *Ashland*. And I've worked the harbor boat down at the landing.

"This is my first trip upriver in some time. Mostly I've been working from Catlettsburg to Nashville and Knoxville. On to Chattanooga and up the Tennessee River and the Cumberland."

Burge stops—self-conscious, I suspect, to be talking so much. And especially about himself. It obviously offends his sense of modesty.

I ask him what he does when he's not working.

"Well, mostly my wife and I like to go boat riding. She works. She's got a job at a sewing factory over in Olive Hill. But it's just part-time, so whenever I come home she can take off. And if I get in the landing down there on a Monday morning and she doesn't want to work, then her boss lets her off and she comes to get me and I can go home for six hours. It works out real well and gives her something to do when I'm gone. She gets bored just sitting at home.

"Being out here for thirty days is tough but it's tough, too, on those back home. They go out to get in the car and it don't start, they've gotta do something to get it started. They've gotta keep the yard cleaned up and mowed. Clean house. Any emergency arises, they've gotta take over and deal with it. They gotta pay the bills. It's all on their shoulders. It's a little like being in the military. We may not be all that far away from home, but when you're out here, you're out here. That's it."

I suggest to Ronnie that boating seems a strange way for him to spend his off hours. Surely there must be something else, I say.

Burge grins.

"Well, I've got this old truck. It's a 1936 Ford pickup, with a flathead V-8 engine. I'm been trying to restore it myself. I stripped all the paint off it. Then took the motor out, cleaned it all up, and painted it. It's dark teal metallic in color. . . . That's the same color that they use on the new Camaros, you know. Looks better on older stuff than it does on new, I think. It looks blue in the shade. But when the sun shines on it, it looks green. It changes colors. My wife, she picked the color out.

"I love old cars and trucks. I like all of 'em, but the ones I really like—the ones I want to own—are from the thirties or the early forties."

Missing Tragedy by Seconds

After an hour and a half, it's finally our turn. We start locking through at 1345, and, because we have to double lock, it's the usual time-consuming proposition. It's 1530 before we're on our way again.

We've been under way for perhaps fifteen minutes when I see a small motorboat ahead in the water. It's crowded. There are four adults, and two, three—no, make that four—children. And it's apparently stalled. A man is frantically trying to restart the boat's small outboard engine.

The boat is directly in our path.

"Look out," I shout. But my warning isn't needed. Burge has seen the boat at the same time I did. And he, far better than I, knows that death for the hapless boaters could be only seconds away.

If you were driving a car or truck and saw a stalled vehicle across the road ahead of you, you'd slam on your brakes.

But a towboat such as the *Blazer* has no brakes. All Burge can do is reverse his engines and try to turn the *Blazer* and its tow so that the stalled boat is no longer directly in his path.

The *Blazer* shudders as the engines respond to his command. He sounds the whistle to warn the boaters. But they need no warning. The two women in the boat have their arms in the water, frantically trying to paddle with their hands. There's no sign of a real paddle.

"What's going on?" asks Captain Davis as he appears in the pilothouse. He's barefoot and his hair is tousled. The commotion has roused him from his afternoon nap.

"We just missed running down a boat full of people and kids," answers Burge.

And he's right. We did miss the boat. But only by inches. We're now at a full stop and close enough to the stalled boat that one of the men in it can—and does—reach out and touch the lead barge.

Mate Jeff Brown is standing on the barge, talking to the people. The

stubborn outboard still won't start. And the boat, badly overloaded, looks as if it may sink at any minute.

Captain Davis takes the microphone and tells the mate: "Well, Jeff, I guess we need to put our boat in the water and tow them into the bank."

That's what's done.

And, afterwards, Ronnie Burge enters the following in the *Blazer* logbook: "1545—Put motor boat in to help a motor boat. His engine quit. Had four people and four kids in it."

An accurate entry? Yes—but one that hardly gives a sense of the drama involved or the disaster that was so narrowly averted. I wonder if the people in the boat have any idea just how close they were—only inches away—from a near-certain death.

This seems an appropriate time to talk a bit about boating safety—and the particular dangers that result when you mix powerful towboats and small pleasure boats in the same stretch of river.

Boating is one of today's most popular recreational activities. By one recent estimate, Americans own more than sixteen million pleasure boats. For many, boating is a fun-filled way of spending a weekend or a summer afternoon. Unfortunately, for many, boating can spell disaster, even death. Boating is this country's second-greatest transportation killer. In 1991, the most recent year for which statistics are available, 924 people were killed in boating accidents in this country. Hundreds more were injured. This is far behind the carnage on the nation's highways but ahead of airline crashes and railroad grade-crossing accidents. And surely the most tragic aspect of this is that many—indeed most—boating accidents could be prevented.

Though the Corps of Engineers operates the Ohio River's system of locks and dams, river safety is the responsibility of the U.S. Coast Guard. The Coast Guard began in 1790 when Alexander Hamilton, then serving as secretary of the treasury, asked for ten boats to patrol the Atlantic coastline to stop smugglers. The first officer in the Coast Guard was Hopley Yeaton, commissioned in 1791 by President George Washington "to command a cutter in the service of the United States of America." For eight years, the small fleet was the new nation's only navy.

The Coast Guard started operations on the Ohio and the nation's other inland rivers in the late 1930s, on the eve of World War II. In the earliest years of travel on the river, pilots navigated by memorizing a series of distinctive landmarks—bluffs, lone trees, farmhouses, islands, and such. But in 1874, yielding to the urgings of concerned rivermen, Congress extended the jurisdiction of the U.S. Lighthouse Service to include the inland rivers. About 150 beacons and buoys were placed along the Ohio in 1875, and by 1920 there were 503 signal lights and daymarkers in

service on the Ohio. In 1939, the Lighthouse Service passed into history, and the Coast Guard took over its six steam-powered tenders. By the 1950s, all had been retired, replaced by modern, diesel-powered boats.

Today, the Coast Guard's second district, headquartered in St. Louis, sprawls over twenty-two states and contains more than thirteen thousand miles of navigable waterway, including the entire 981-mile length of the Ohio. Boats depend on the Coast Guard's VHF-FM radio network to report emergencies and river navigations. Coast Guard inspectors certify tank barges and passenger vessels, investigate accidents, and these days spend an increasing amount of time dealing with oil spills and other pollution problems.

Coast Guard tenders monitor the buoys that mark the channel and the river's signal lights and daymarkers. Those located on the upper Ohio and its tributaries are the responsibility of the Coast Guard tender *Osage*, stationed at Sewickley, Pennsylvania. The busy crew of the *Osage*—a twin-screw boat built in 1962 by Gibbs Corporation in Jacksonville, Florida—is responsible for the aids to navigation on the Allegheny, Monongahela, Kanawha, and Big Sandy Rivers, as well as that portion of the Ohio River from Pittsburgh to the Captain Anthony Meldahl Locks and Dam at Mile 426.2, just upstream from Foster, Kentucky.

On a typical sweep down the river and back, the *Osage* will repair or replace a number of damaged navigation buoys, make stops to cut back weeds and brush from land which the Coast Guard leases for navigation lights along the banks, and replace burned-out bulbs in the lights.

With fewer than forty thousand enlisted personnel and officers, the Coast Guard is by far the smallest of the nation's five armed services. But to that number must be added not only eleven thousand reservists but also more than thirty-five thousand volunteers who are members of the Coast Guard Auxiliary. Auxiliary members have no legal authority. They cannot stop and board a boat suspected of safety violations. They can't issue tickets. And they must pay for their own gasoline, uniforms, boats, and equipment. However, auxiliary members are invaluable to the Coast Guard in countless ways, from helping with search-and-rescue missions to teaching boating safety classes aimed at preventing accidents before they happen.

Statistics compiled by the Coast Guard show that alcohol is involved in approximately 50 percent of boating fatalities. Ironically, in a society where drinking and driving is no longer winked at, by either the law or society, setting sail with a boatload of booze remains a socially acceptable practice.

Yet, alcohol has the same effect on the brain whether one is driving a car or operating a boat. When a person has been drinking, the brain

becomes depressed and processes information more slowly. The result is delayed reaction time in sudden, high-demand situations, such as trying to navigate through a storm—or playing tag with a towboat and its barges.

A towboat and its barges can easily be one thousand feet or more in length and, in an emergency, can require a mile or more to stop. In addition, towboats have very little lateral maneuvering room. The speed of a towboat can be deceptive. A boat may look as if it's not making much headway but is actually traveling one mile in seven minutes. Thus, if a water skier falls a thousand feet in front of a moving tow, then he or she has less than one minute to get out of the way.

Moreover, since the helmsman on a towboat is located at the after part of the tow, he has limited forward visibility. There is a large area immediately in front of the tow that is blocked to his view. With a 1,200-foot tow, this "blind spot" can easily be 600 feet or more in length. And this problem is made even worse when the tow includes empty barges. Empties are almost always carried at the head (front) of the tow. Otherwise, the tow becomes too difficult to manage. But empties ride high in the water and thus block even more of the forward view than would loaded barges.

"Wheel wash" is another danger. A strong underwater current caused by towboat engines, it can result in severe turbulence hundreds of yards behind a tow.

Then there's the matter of the channel. Heavily loaded towboats and barges may have only a few inches clearance on the boat. As a result, they're unable to operate outside the buoyed channel. Most recreational boaters, on the other hand, have more flexibility. Thus, a smart boater will use that flexibility to maneuver out of the way and leave the channel to a passing towboat and its barges.

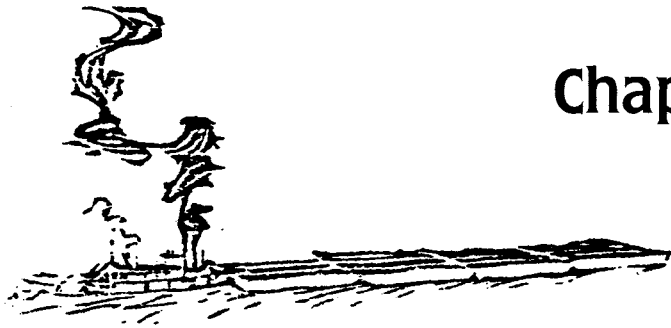
Here are some common-sense safety pointers for boaters:

- Have safety equipment approved by the Coast Guard. This includes air horns, fire extinguishers, and what most of us would call a "life jacket" but the Coast Guard calls a "personal flotation device." A National Transportation Safety Board survey of 407 boating fatalities in eighteen states found that 85 percent of the victims were not wearing flotation devices. Thirty-six children survived the accidents, with fifteen of them surviving only because they wore life jackets.
- When running at night, use running lights and anchor lights.
- Don't use alcohol or drugs when operating a boat.
- Stay out of the restricted areas around locks and dams. Just below

the dam, turbulence causes the water to flow back toward the dam and will draw a small craft with it.

- Stay away from towboats. A boat pushing one thousand feet of barges has several large blind spots and needs a lot of room to stop. The *Blazer* was able to avoid running down the overloaded motorboat in its path, but it easily could have hit the small craft. And, had that happened, it seems certain that some or all of those aboard would have been killed.
- Stay off the river during high water.
- If your local unit of the Coast Guard Auxiliary offers a safety class, take it.

Sometimes boating safety classes also are offered by local chapters of the Propeller Club of the United States, and this is a good place to say a few words about that organization. Organized in 1927, the Propeller Club works to support the American Merchant Marine and to promote improvements to the nation's harbors and inland waterways. The club is composed of "ports" which have been chartered in almost every U.S. city of any size that's located on the water, be it salt or fresh. Most members are engaged in ocean- or river-related businesses of some sort, but membership is open to anyone interested in promoting the club's objectives.



Chapter 12

Once the small boat that the *Blazer* nearly rammed has been safely towed to shore, it takes thirty minutes or so to hoist our own boat back aboard and secure it. Then we're on our way again. Ten minutes later, we reach Star Point where we drop off two barges loaded with no-lead gasoline and pick up an empty. That, of course, means remaking the tow again. Sometimes that's a matter of minutes; at other times it takes hours to accomplish. This is one of those latter times. It's 1800 when we arrive and 2310 before we depart, northbound with four loaded barges and the one empty.

Long before we finish making the tow, I head downstairs for my nightly bedtime dish of ice cream. We're out of strawberry. I settle for chocolate. Then it's out on the deck for a quick breath of fresh air and off to my bunk. As usual, I'm asleep almost as soon as my head hits the pillow.

The night ahead—while I sleep—would be a busy one for the *Blazer* and her crew. We're nearing Pittsburgh and that means lots of bridges—first the Sewickley highway bridge and then the Interstate 79 highway bridge as we followed the channel along the north side of Neville Island.

When the two Ronnies traded places in the pilothouse at midnight, the *Blazer* was just starting to lock through at the Emsworth Lock and Dam, at Mile 6.1. Built in 1921, Emsworth replaced Lock and Dam 1, commonly called the Davis Island Locks and Dam, which was built in the years from 1877 to 1885. As was previously discussed here, Davis Island was the first lock and dam on the Ohio and the first movable dam in the United States. Emsworth replaced both it and Lock and Dam 2, built in the years from 1889 to 1906. Emsworth was "rehabilitated" in a major project completed in 1984. The *Blazer* departed Emsworth at 0130, and 45 minutes or so later we tied off the tow to deliver a barge of kerosene and diesel fuel to the Pennzoil refinery at Rouseville, on the Allegheny River, just upstream from where it meets up with the Monongahela to form the Ohio.

Best known for its motor oil—heavily advertised in TV commercials that feature golfing great Arnold Palmer—Pennzoil is the eighteenth largest U.S. oil company. It traces its history back to the South Penn Oil Company of Oil City, Pennsylvania, which was formed in the wake of 1911's court-ordered breakup of Rockefeller's Standard Oil monopoly. In 1963, South Penn attracted the attention of two Texas brothers, J. Hugh and Bill Liedtke, who in 1959, in partnership with a gentleman from Connecticut by the name of George Bush, had formed an enormously successful oil venture, Zapata Petroleum. Bush later sold his interest in Zapata, went into politics, and eventually ended up in Washington—at 1600 Pennsylvania Avenue. Meanwhile, the Liedtke brothers ended up in Pennsylvania, where they teamed up with legendary oilman J. Paul Getty, staged a corporate takeover of South Penn, merged it with Zapata, renamed it Pennzoil in honor of the lubricant, and moved virtually everything but the refinery to Houston.

We departed the tow with the Pennzoil-bound barge at 0325, entered the Allegheny ten minutes later, proceeded upstream for slightly less than an hour, dropped the barge off at the refinery dock, then turned around and made our way back to the tow, having spent something less than two hours on the Allegheny—while I was snoring away in my cabin below.

The Allegheny rises in the hilly plateau region of Potter County, Pennsylvania, and flows in a general northerly direction for about 80 miles, a rock-filled woodland stream that loops into New York State where the Allegheny Reservoir is impounded at Allegheny State Park. Turning southwest, it then continues for 120 miles, meanders a bit to the southeast, then southwest again, eventually joining with the Monongahela River at Pittsburgh to form the Ohio River. In its total length of 325 miles it drains an area of 11,410 square miles. Its chief tributaries are the Kiskiminetas, Clarion, and Conemaugh Rivers and Red Bank, Oil, and French Creeks. It was on the banks of Oil Creek that Edwin L. Drake drilled his 1859 gusher that ushered America into the petroleum age.

The Allegheny was important for flatboat and keelboat commerce until the arrival of the railroads. Federal interest in the Allegheny dates from 1879, when Congress authorized the removal of boulders and snags from the channel and the construction of a series of low-diversion dams and dikes. It would, however, be 1903 before actual work would start on any of the dams. Between that year and 1938, nine would be built, at a total cost of $18.1 million. Allegheny Lock and Dam 1 was removed when the Emsworth Dam was constructed at the head of the Ohio and the pool raised.

As a result of the dams, the Allegheny is navigable for a distance of 72

miles from its mouth at Pittsburgh to East Brady, Pennsylvania. Traffic on the Allegheny in 1988 amounted to 3.3 million tons, and consisted primarily of coal, coke, sand and gravel, iron and steel, and petroleum products.

The Forks of the Ohio

Down in my cabin, I get my usual rap on my door at 0500 Wednesday morning. Curious, I pull the curtain and look out the cabin window and, much to my surprise, see the bright lights of a city—a big one—out there. We're just off the Golden Triangle at Pittsburgh, where the Allegheny and the Monongahela come together. The lights of the downtown business district's many tall buildings are twinkling in the darkness and, as the dawn starts brightening the sky, traffic is just beginning to funnel its way along the freeways. The city, the second largest in Pennsylvania and the seat of heavily urbanized Allegheny County, is coming awake for another busy day.

Pittsburgh's history can be traced back to 1681 when William Penn was granted the province of Pennsylvania by the British crown. The following year the French laid claim, through La Salle's coming upon the Mississippi, to all of the territory drained by its tributaries. In the resulting dispute between the British and French, the "Forks of the Ohio" were of pivotal importance.

In 1754, the French built a wooden fortification at the junction of the two rivers and christened it Fort Duquesne. Fearing this rampart would be but the first in a series the French would construct all up and down the Ohio, the royal governor in Virginia dispatched a force of British regulars and colonial militia with the assignment of taking the fort. They got no closer than sixty miles before they were forced to turn back. The next year, a larger force under the command of General Edward Braddock was dispatched and came within a few miles of the fort but were ambushed. Following Braddock's orders, the redcoats were marching in formal ranks—like tin soldiers on parade—and were cut down by a murderous fire from the hidden French and their Indian allies.

By 1758, however, French reverses elsewhere made it impossible for them to continue maintaining garrisons in far-flung locales such as Fort Duquesne, and they were forced to withdraw, burning what they couldn't take with them. When a third British military expedition arrived at the fort, it found little left but a charred ruin. The expedition's commander, General John Forbes, immediately set his men to rebuilding the fort and wrote to William Pitt the Elder, telling him he had named the spot "Pittsburgh" in his honor.

Although the French were gone, danger still lurked. The Indians, many of them old allies of the French, complained they were being cheated by unscrupulous traders, as no doubt they were. And they were angered by the many settlers who had moved into their traditional hunting grounds, clearing land and building cabins, without even the farce of treatymaking. Led by an Ottawa chief, Pontiac, an uprising broke out in 1763 with Indian bands raiding many small settlements and even threatening Pittsburgh itself. Troops were dispatched and confronted Pontiac and his warriors at a spot called Bushy Run. The redcoats, it appears, had learned a thing or two about fighting Indians since Braddock's defeat. The British troops faked a retreat, luring Pontiac and his braves out of their wooded cover. But when the Indians moved in, intent on finishing off the retreating troops, they were ambushed by others who had been hiding, waiting for the Indians to fall into the trap. With the fighting power of the Indians broken, Pittsburgh was free to grow. And grow it did.

Settlers arrived in increasing numbers, and a town was laid out around the fort. With the French gone and the Indians subjugated, the fort itself was no long needed. Its walls crumbled, the new town's streets were extended right through it, and enterprising citizens eventually carted off most of its brick and stone to build houses and shops. The end of the Revolutionary War brought a new wave of arrivals to the Ohio Valley. By the early 1880s boatbuilding had become a major industry in Pittsburgh, as it became the outfitting point for westward-bound settlers making their way down the Ohio River. In the War of 1812, many of the cannons and cannon balls used to fight the British were cast in furnaces in Pittsburgh and nearby Wheeling.

In the 1850s, the railroads reached Pittsburgh, and, with the outbreak of the Civil War, Pittsburgh plants were kept busy producing heavy artillery and other military items needed for the Union Army. By the war's end, the Pittsburgh area was producing half of America's steel and a third of its glass. And in the years following the war's end, those plants worked overtime, turning out materials needed to repair the widespread destruction the fighting had brought.

Thousands of wooden railroad trestles had been burned in the war. The Pennsylvania Railroad became the first to launch a program aimed at converting all its bridges to iron. Other railroads quickly followed suit, providing lucrative contracts for Pittsburgh steel mills such as that operated by Andrew Carnegie.

Carnegie was born in Dunfermline, Scotland, on November 25, 1835, and when he was twelve years old came to this country with his family. The family settled in Allegheny, Pennsylvania, later annexed by Pittsburgh. Almost immediately, the young Carnegie went to work as a bob-

bin boy in a cotton factory. Later he worked for the Pennsylvania Railroad. In 1864, he bought a farm on Oil Creek and, like many of his neighbors, soon found himself in the oil business—and on his way to becoming a very rich man. Foreseeing the extent to which the nation's demand for iron and steel would grow, Carnegie started in 1873 the Keystone Bridge works and by 1888 had built it into a major operation. He then began buying out rival steelmakers and continued to prosper, eventually coming to monopolize the industry. In 1901, Carnegie sold all his holdings to a syndicate headed by financier J.P. Morgan which reorganized them as the U.S. Steel Corporation. The price: $250 million. Carnegie left the United States and moved back to Scotland, taking up residence in a remote castle, where he spent the last eighteen years of his life giving away his immense fortune. Among his many gifts: a network of public libraries located in so many American towns that the phrase "Carnegie library" became virtually part of the language.

Just as Pittsburgh was the birthplace of many large corporations such as U.S. Steel, its factories—dark and dangerous places where workers, many of them as young as the twelve-year-old Carnegie or even younger, toiled from sunup to sundown for paltry pay—were fertile soil for the seeds of unionism. It was in Pittsburgh that eight union groups came together to form the Federation of Organized Trades and Labor Union. Led by Samuel Gompers, the group was a forerunner of the American Federation of Labor, which later combined with the Congress of Industrial Nations to form today's AFL-CIO.

In World Wars I and II, Pittsburgh played a key role in producing the guns and tanks and planes needed for modern combat. But, at the end of World War II, the city's residents took a look around them and didn't like what they saw. In fact, on many days, you couldn't see anything. The fog from the rivers combined with the smoke and soot from the city's hundreds of smokestacks to form a dirty smog that obscured the skyline and left a thin coat of dirt on everything. Asked what he would do to improve the city, famed architect Frank Lloyd Wright is said to have advised: "Abandon the place and rebuild anew!"

But the people of Pittsburgh weren't about to abandon their city. Instead they mobilized the most ambitious cleanup effort ever seen anywhere. Smoke controls, first legislated in 1947, were zealously enforced. A new $100 million sewage disposal system brought cleaner rivers. At the site of old Fort Pitt, sixty acres of slums were cleared and replaced with an attractive park. Narrow streets and avenues gave way to broad expressways. Handsome skyscrapers sprouted in the downtown. The city was, literally, reborn.

The Monongahela

Turning from the view of Pittsburgh provided by my cabin window, I quickly dress and hurry off to breakfast, anxious to get topside and get an even better look at the city outside. (The thought of shaving off my lengthening beard doesn't even cross my mind.)

I get to the pilothouse just as we rejoin our tow and as the two Ronnies again are trading places. As could easily be predicted, the first words out of the captain's mouth are: "Well, what do you say now, Ronnie?" Making the tow secure, we immediately depart northbound, with four barges—three loaded and one empty. And ten minutes later we enter the Monongahela River.

The Monongahela River—called simply the "Mon" by Pittsburghers and rivermen—is formed at the junction of the Tygart and West Fork Rivers at Fairmont, West Virginia, and flows north for 129 miles to Pittsburgh. The Indians called it the "river of falling banks," and steep they are from its beginning at Fairmont, West Virginia, to the Pennsylvania border and beyond.

In the years immediately following the American Revolution, an increasing number of emigrants pushed their way across the mountains, and with the 1787 enactment of the Northwest Ordinance opening the Ohio Territory to settlement, that wave of settlers became a floodtide. Many used the Monongahela and the Ohio as their highway, and to provide them the craft they needed a small army of boatbulders set up shop along the banks of the Monongahela. The nearby dense hardwood forests provided all the timber that was needed to fashion flatboats, keelboats, and, in later years, steam-powered packets. It's impossible to say precisely when the first boats were launched, but in 1777 a crew of fourteen carpenters, working at a small mill near the present McKeesport, built thirty boats for use in defense of the various forts that had been constructed on the Ohio River. The boats used by General George Rogers Clark in his 1778 expedition were built by John Minor near the mouth of Dunkard Creek and at Brownsville.

As early as 1782, a chap by the name of John Yoder made a flatboat voyage carrying produce from Fort Redstone, at the mouth of Redstone Creek below Brownsville, all the way down the Ohio and Mississippi to New Orleans. His voyage was a commercial success and others followed. Such a trip could take as long as six months and was fraught with hardship and hazard. Some lucky few boatmen returned by sea to Baltimore and then overland the three hundred or so miles to their homes, but most walked back through the wilderness, a hike of two thousand miles.

When keelboats eventually replaced the flatboats, round trips became customary—but, as has been remarked here earlier, only as the result of backbreaking work by the keelboatmen who sometimes all but carried the boats upstream. Later, the *New Orleans*, the first steamboat to travel the Ohio and Mississippi Rivers, was built on the Monongahela.

Interest in improving navigation on the Monongahela—and thus providing cheap transportation from the rich coal field it traversed—steadily grew, especially after completion of the National Pike to Brownsville in 1819. Nine years later, in 1828, an engineer, Edward Gay, did a survey of the Monongahela for the commonwealth of Pennsylvania and concluded that navigation along it could be fostered by construction of a series of locks and dams. A second survey done in 1833 at the direction of Congress reached the same conclusion and recommended specific locations of the locks and dams, even offering cost estimates for same.

In 1837, the Monongahela Navigation Company, a stock company, received an official charter from the commonwealth of Pennsylvania to improve the river by constructing a series of locks and dams. McClung's Bar (Mile 1.95) was chosen as the site of Lock 1. The site for Lock 2 was at the head of Braddock's upper ripple (Mile 11.2). Lock 3 was situated at Watson's Run (Mile 25), Lock 4 at Frey's Shoals (Mile 41.2), and Lock 5 at Denbo (Mile 58.9). Locks 1 and 2 were opened for use in 1841, and to celebrate the event the company allowed their free use, with no tolls charged, for the first week of operation. Locks 3 and 4 were opened in 1844. Eventually, the company built seven locks and dams.

As early as 1886, Congress, having undertaken navigation improvements on both the Kanawha and Ohio Rivers, proposed to buy out the Monongahela Navigation Company and free the river of tolls but the negotiations occupied more than a decade, with the actual freeing of the river taking place at 3:30 P.M. on July 7, 1897. After purchasing Locks and Dams 1 through 7, the federal government then constructed eight more—Nos. 8 through 15.

In 1938, Lock and Dam 1 was removed when Emsworth pool was raised seven feet by the Emsworth Dam on the Ohio River. In the 1940s, Locks and Dams 2, 4, and 8 were improved with new locks and/or higher lift dams. In addition, new projects were built and Locks and Dams 5, 6, and 10 through 15 were removed. Replacement projects for Locks and Dams 7 and 8 are under construction.

Historically, the Monongahela has been a major mover of coal from the mines of West Virginia and Pennsylvania to the electric power plants and steel mills downriver and on the Ohio. In the early 1980s, traffic on the "Mon" steadily declined, a direct reflection of the decline in the fortunes of the region's steel industry. But beginning in the late 1980s those

declines were reversed, as coal traffic surged. In the years 1986 through 1988, coal and coke accounted for 87 percent of the river's traffic, aggregates (sand and gravel) for 6 percent and petroleum 3 percent.

On The Mon

At 0650, we arrive at the Amoco dock at Hays (originally a town all its own but long since annexed by Pittsburgh) to deliver three barges. Two are loaded with no-lead gasoline that we have hauled all the way from Ashland Oil's Catlettsburg refinery and the third is a load of diesel fuel that we picked up at Midland. Amoco sells gasoline through a network of about ten thousand service stations, primarily in the midwest, east, and southeast. Its corporate history dates back to the days of the Rockefeller trust when it was organized as Standard Oil of Indiana. It became an independent company when the trust was broken up and picked up the Amoco name in 1923 when it acquired the American Oil Company, which had been selling its antiknock gasoline (the first ever marketed) under the Amoco trade name.

The distance from the mouth of the Monongahela to the dock at Hays is approximately six miles. In that short stretch, we have to negotiate seven bridges—the Fort Pitt highway bridge, the Smithfield Street highway bridge, the Conrail Railroad bridge, the Liberty highway bridge, the South Tenth Street highway bridge, the Monongahela Connecting Railroad bridge, and the Birmingham highway bridge. Its three rivers—the Allegheny, Monongahela, and Ohio—provide Pittsburgh a truly spectacular setting. But they also require bridges. Lots of them. I'm not sure who counted them, but it's claimed the city is home to three hundred named bridges and hundreds of lesser ones.

At Amoco Hays, it takes a couple of hours to strip the rigging from the barges we're dropping off. Also the deckhands must take a giant hose—a "bridge hose," it's called—and hook up between the two barges of no-lead. We'll leave it in place and collect it on our way back.

At 0915 we're off again. Our next stop will be to drop off an empty barge at the giant Jones and Laughlin Steel mill at Hazelwood, since 1968 part of LTV Corporation, a Dallas-based conglomerate. We arrive at 0930, spot the barge, and depart, lightboat.

At 1050, we're at Lock 2, where we lock through in a matter of minutes. The change of watch at 1200 finds us arriving at Bosewell Oil at Dravosburg, where we pick up an empty barge.

Departing Bosewell, at 1230, we encounter a strange site: the towboat *Jacob G*, surrounded by a ragtag flotilla of small boats. Radio traffic informs us that a movie crew is using the towboat as a set and Coast Guard

craft are patrolling the area to keep it clear. One of the *Blazer* deckhands says he heard something on TV about Hollywood action-hero Bruce Willis doing a movie in Pittsburgh, but if Willis or any other film star is aboard the *Jacob G*, they're hiding somewhere and not to be seen, even when we carefully search with our binoculars.

(Titled *Striking Distance* and released by Columbia Pictures in September of 1993, the movie we saw being made indeed starred Bruce Willis as a fifth-generation Pittsburgh cop, busted from homicide detective to river patrol when he publicly challenged the department about the identify of the serial killer who took his father's life. A press release issued by Columbia quoted writer-director Rowdy Harrington as saying he was inspired by his hometown when he sat down to write the screenplay. "I wanted to make a film in Pittsburgh, where I grew up. When I started to think about the city and what was unique about it, the first thing that came to mind were the three rivers. When I thought about the murder mystery as a genre, I realized it hadn't really been done as we're doing it, as a crime drama on the rivers, about a river cop." The crew spent thirty days and nights, filming on the Ohio, Allegheny, and Monongahela. In one of the movie's major action scenes, Bruce Willis boards the *Jacob G* and rescues two DEA agents being held hostage.)

Soon we leave the moviemakers behind, and at 1300 we tie off the empty barge at Clairton, then depart lightboat. Roughly two more miles upstream, about 23 miles from the city of Pittsburgh, we come to Elizabeth, Pennsylvania, home to the Consol Coal Group's Twin Rivers Towing Company.

Overall, the National Coal Association lists Consol as the nation's second largest coal producer. In 1992, it produced 56.3 million tons of coal, second only to Peabody Holding Company's 90.8 million tons.

Consol's Twin Rivers Towing maintains a fleet of six towboats and three hundred barges. In a typical year, Twin Rivers generates a payroll of more than $2.6 million and pays approximately $240,000 in federal, state, and local taxes. It provides year-round transportation and other river-related services to public terminals and Consol mines in northern West Virginia and southwestern Pennsylvania and each year moves more than ten million tons of coal to customers along the Mon.

The annual value of the cargo carried by Twin Rivers currently exceeds $250 million. And Paul M. Kvederis, public relations manager for Consol in Pittsburgh, reports that Twin Rivers "spends more than one million dollars a year for supplies, ranging from fuel oil to towing rope and life jackets, much of which is bought locally."

Next, we make our way through Lock 3 and arrive at Floretta to pick up another empty barge. Floretta is twenty-five miles up the Mon, and

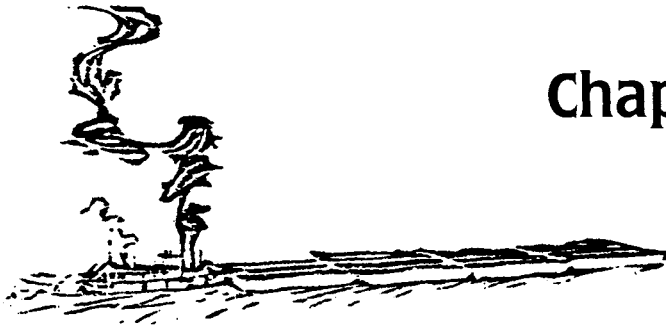
this is, in a sense, the end of the first half of our trip. Here we turn around and head back the way we came.

We're headed home.

We make our way back through Lock 3 and head downstream. When we encounter the *Jacob G* and the film crew again, the Coast Guard halts us for thirty minutes or so. The cameras must be rolling.

At 1640, we're on our way again. Thirty minutes later, we go through Lock 2, a thirty-minute proposition. At 1830, we tie off the tow to pick up one of the barges we left at Amoco Hayes and another, loaded with tar, at Jones and Laughlin at Hazelwood. By 2105, we're on our way, southbound with the two empties and one load. At 2200 we leave the Monongahela behind and return to the Ohio. Two hours later we're at Ann Gordon Lube at McKee's Rock. We pick up another barge, this one loaded with lube oil. At 2310 we depart southbound, with two empties and two loads. Captain Davis doesn't like the way the tow feels and, slowing down, tells the deckhands to add some more rigging to tighten things up. Better safe than sorry. Better too much rigging than not enough—and maybe a river full of loose barges.

When the midnight watch changes, we're waiting our turn at Emsworth Locks and Dam.



Chapter 13

I had called it a night and turned in while we were locking through at Emsworth. Arriving in the pilothouse the next morning, I follow what's become my customary routine, checking the log and the chartbook to see our progress overnight. I find that at 0105 we tied off the tow to pick up three empty barges, two at Coropalis and one at Tiogo Pipeline. At 0400, we had made our tow and so departed southbound with seven barges, five of them empty and two loaded—or, as the shorthand entry in the log reads, "5 emtys and 2 lds." Twenty minutes later, we arrived at the Dashields Locks and Dam.

We're just departing Dashields when I arrive in the pilothouse. Captain Davis has relieved Ronnie Burge only minutes before. The captain sees me enter and greets me: "Well, what do you say now?"

"Not much," I reply.

We travel along pretty much in silence for the next couple of hours. We've more or less run out of small talk. I've long since grown tired of asking questions, and the captain, I suspect, has grown equally tired of answering them.

At 0825, we enter the Montgomery Lock. It's a 600-foot lock. Actually, Captain Davis informs me, it only measures 598 feet and 3 inches. In any event, the short length means we have to break the tow into two sections and lock them through individually, always a time-consuming proposition. We spend nearly two hours at the lock, departing at 1020.

I noticed nothing amiss, but something in the locking procedure seems to have left the captain's nose out of joint.

"One of the things that can make it rough," he says, "is when you have a lockman who's been on the job for six months and a fellow here in the pilothouse who's been on the river for years."

Captain Davis summons two deckhands and tells them he wants them to go up and mop clean the roof of the pilothouse. If they're enthusiastic about the assignment, they do a wonderful job of hiding it.

On the roof is the radar antenna. It's long and low and, when the radar is turned on, rotates in a quick circular pattern much like the sweep hand on a wristwatch. The captain recalls a tragic accident in which the radar was switched on while a deckhand was on the roof. The rotating antenna hit him from behind and knocked him from the roof, killing him. As a result, standard safety procedures now call for the antenna to be locked in place with padlocks when anyone ventures onto the roof.

We again pass the defunct Shippingport nuclear station, looking like something out of a science fiction movie on the late show. The 1,100-ton steel reactor vessel of the reactor, which began producing power in 1957 and was shut down in 1982, has been encased in concrete and transferred in one piece for burial in a government nuclear reservation in Hanford, Washington.

At 1115, home base calls and asks if we can pick up another barge. Captain Davis tells them: "I'll have to get back to you. I'm out here in the middle of the river trying to pull a barge."

I can't put my finger on it, but it seems to me the captain is bugged about something. He's not generally snappish like this. But what could it be?

Minutes later, the intercom blares to life. It's engineer Steve Bellomy calling. My first thought is that there's an emergency of some sort. But, no. It turns out he's been watching something on television and the program was just broken into with a news bulletin. It seems Texas billionaire Ross Perot has just announced that he's withdrawing from the presidential race.

Eventually the long silence in the pilothouse gives way to some conversation—thank goodness—and somehow the topic of hazing comes up. Captain Davis, apparently now in a more chipper mood than earlier, recalls that in years past, when a new crew member would come aboard a towboat for his first trip, the old-timers frequently would ask him a long list of questions: "Now, how do you want to handle your utilities? You want 'em deducted from your check or do you figure you'll just go ahead and pay cash for 'em? Oh, and how many showers a day do you take? One or two? We need to know so we can figure how much water to bill you for. And by the way, how late do you read at night?"

The captain chuckles, then thinks of something else: "Sometimes we used to send them in search of a key to wind the radar. I remember one time when we made up a big cardboard key and covered it with aluminum foil so it would look like metal."

At noon, Ronnie Burge takes over for Captain Davis, spots one of the empty barges at the Ashland Oil dock at Midland (Mile 35), and then

goes to work rearranging the southbound tow. It's a long, tedious process, and it's 1400 before the tow is complete and we depart southbound, with "4 emtys and 2 lds."

At Mile 40, we cross the state line, leaving Pennsylvania behind. Now it again will be West Virginia on the river's south bank and Ohio on the north bank.

At 1535, we're at the Ashland Oil dock at Wellsville, Ohio, where we tie off the tow to pick up two empty barges. We depart lightboat and at 1610 pick up the first of the two at the Quaker State refinery at Congo. Less than an hour later, we're at East Liverpool, where we pick up the other. Then it's back to Wellsville to add the two barges to the tow. There the watch changes at 1800, with Captain Davis taking over for Ronnie Burge.

At 1925, we depart Wellsville, southbound. Now, the log indicates we have "6 emtys and 2 lds." At 2045 we're at the New Cumberland Locks and Dam. As we're locking through, the routine is broken by a pleasant surprise: Wilma comes into the pilothouse carrying a plate.

"I fixed you some homemade fudge," she tells us. "I thought I'd best do something for you as the boys ate all the ribs I fixed for dinner and you're not gonna find much left down there to snack on when you go down later."

The fudge looks delicious. It tastes even better. I eat one piece, then a second, and, yes, then a third. I promise myself that I'll go on a diet when I get home. Actually, I'll have to. Otherwise, none of my clothes will fit me.

At New Cumberland, a dozen or so visitors stand on the observation platform and watch with interest as we lock our way through.

The skipper of the *Valvoline* calls by radio. He's bound upriver and wants to know the situation there.

"That's Max English," says Captain Davis after he completes his conversation and signs off. "He's a good ol' boy. Been with Ashland for years."

Minutes after we leave the lock, we meet the *Valvoline*. Captain Davis steps out of the pilothouse and waves his arms back and forth a couple of times, semaphore-style. Reentering the pilothouse, he explains. "That's what we call a `towboat wave.' People on the river have been doing it for years. It's a tradition of sorts, I guess."

We glide along the river in silence for a while. Despite our earlier exchange about hazing, the captain is unusually quiet. It's almost like there's something on his mind, but he doesn't know how to broach the subject.

"I need to ask you a question," Captain Davis says.

"Sure," I reply.

"You *are* planning to shave before we get back downriver, aren't you?"

"To be honest, I'm not really sure," I say. "This is the longest time I've ever gone without shaving. And my beard is just beginning to look halfway decent. I thought it might itch, but it doesn't. So I'm kinda tempted to keep it."

"Well," the captain says. "I figure somebody from the company is apt to come aboard to meet you when we get back home. You know we don't let the boys out here grow beards. It's a safety thing. If there was a fire and they had to use a gas mask, a beard would keep the mask from sealing properly. So they can't wear beards. Of course, I know you're a guest. But I thought I ought to tell you."

So the cat's out of the bag. I knew something was bugging the captain, but I had no idea what it might be. It never dawned on me that he was concerned about my not shaving.

Captain Davis is obviously not happy about this whole line of conversation. But the beard simply isn't something of any consequence to me.

"Hey, no problem," I say. "I'll get rid of it before we get back."

"Well, I do think it would be a good idea."

We travel along in silence for a few minutes more, then I quietly get up and go downstairs to my cabin. Fetching my toilet kit, I take out the electric razor that's gone untouched on the trip thus far. Ridding myself of the offending beard is surprisingly easy work. "BUZZZZ" goes the razor as I run it back and forth over my cheeks, chin and across my upper lip. Another "BUZZZZ" or two and that's it. There's nary a whisker to be seen. I quickly splash on a bit of after shave lotion and head back to the pilothouse.

I enter in silence and take my accustomed seat beside Captain Davis, who looks at me and realizes what I have done.

"Hey," he says, "I didn't mean that you had to go below and shave this very minute. You could have waited."

"Shucks," I insist. "I probably wouldn't have looked good in a beard anyway."

It's midnight and Ronnie Burge arrives to relieve Captain Davis. The captain and I venture downstairs to see if the crew, even though they consumed all the ribs, left anything else for us to make a midnight snack from. I settle for my usual dish of ice cream and leave the captain foraging in the pantry. I go back up to the pilothouse.

"What happened to your beard?" asks Ronnie Burge.

"The captain 'suggested' that I shave it off."

"We figured he would," says Burge, a broad smile on his face. "All of

us have been talking about it and wondering how long it would take before he said something to you about it. I'm surprised he didn't mention it to you earlier."

Rookie at the Helm

When I arrive at the breakfast table Friday morning, Captain Davis already has finished his breakfast and headed for the pilothouse. After I eat, I join him there. Checking the log and the chartbook, I find that we made two locks during the course of the night. Otherwise the log shows no activity.

At 0005, we entered Pike Island, departing at 0035. A bit less than five hours later, at 0505, we entered Hannibal, departing at 0600, just as the watch was changing.

Captain Davis laughs and says: "Ronnie said it seemed strange to run all night and not pick up a barge or drop one off."

The kind of work that the *Blazer* has been doing on this upper end of the river is hard on both the boat and the members of its crew. The *Blazer* is a powerful boat that was designed to push large tows of barges from Point A to Point B, generally a couple of hundred miles away. It really wasn't intended to spend its time shunting single barges back and forth over short distances. It's a little bit like using a giant tractor-trailer rig to run back and forth to the supermarket in every time you need a loaf of bread or a quart of milk. If the economy were in better shape, Ashland Oil might hire a local boat to do this sort of work for it, thus freeing up the *Blazer* and its sister boats to spend all their time making long runs up and down the river. But, in the current flat economy, it's hard to justify the outlay that would require. Moreover, the alternative to using the boats in their current fashion might well be to drydock one or more of them until the economy picks up. So, even though the crew may grumble a bit about having to spend so much time jockeying barges back and forth, it obviously beats being laid off and standing in line with the rest of the folks down at the unemployment office.

When I succeeded in inviting myself aboard the *Blazer*, I asked how long it would take to travel upriver to Pittsburgh and back and was told "five or six days." And that would be the case if you were simply delivering a tow of barges and then heading back downriver with another tow. But the "taxi service" we've been running, picking up one barge here and dropping off another one there, is a slow process, adding hours, and eventually days, to the trip. I'm due back on the job on Monday

morning, and I'm beginning to think I may be forced to jump ship if I'm to make it back to Huntington by then.

The captain and I travel along in silence for some time. I figure he may still be nervous about my reaction to his request that I shave off my beard. I wonder if maybe I should say something about it and reassure him that it's no big deal.

"Hey," he says. "Want to try your hand at driving this thing?"

"Are you serious?" I ask.

"Sure," he says. "All you've got to do is keep it in the channel. And I'll be right here all the time. Just watch that jack staff out there on the lead barge." He points to a small triangular flag fluttering in the breeze.

"If you can see the riverbank behind that jack staff and it looks like it's going to climb the bank, then you know you're going to have to turn the boat in order to stay in the channel."

Am I nervous? You bet. My heart is in my mouth. A long tow of barges and two engines with more than 4,000 horsepower, and I'm at the controls. It's a sobering thought.

I ask Captain Davis if he will snap my photograph while I'm steering.

"Sure," he says, picking up my camera and raising it to his eye.

CLICK!

"Let me take another shot from over here," the captain says, moving just a bit and trying another camera angle.

CLICK!

My moment of glory is immortalized with not one but two photographs, and, frankly, I'm more than ready to let the captain take back over. My tour of duty as a towboat pilot has lasted perhaps all of ten minutes. But that's more than enough for me, thank you.

At 0750 we tie off the tow to deliver one of the empty barges. Again we leave a crewman aboard the tow to keep an eye on things.

"The Coast Guard will fine you five hundred dollars a barge if you don't," says Captain Davis. "So you have to leave somebody. No matter what the weather. Even if it's boiling hot or freezing cold. Heatstroke or frostbite are things you really have to worry about when you leave somebody out there on a hot day or in the middle of winter. It can be rough."

At 0900, we drop the empty off at Ron's Run Dock, then head back and pick up the rest of the tow. At 1045, we're southbound with seven barges, five of them empty and two loaded.

The watch changes, with Ronnie Burge relieving Captain Davis.

At 1230, we reach Bell's Run, where we drop another of the empty barges. Then, leaving the tow behind, we depart lightboat for St. Mary's, arriving there at 1300 and picking up two barges, one loaded and one

empty, the 102. Then, it's back to Bell's Run with them, to add them to the two. Finally, at 1155, we depart Bell's Run, heading south with five empties and three loads. We've spent the entire afternoon jockeying barges back and forth.

We're making good time, and at 1610, we reach Willow Island Locks and Dam, departing at 1650.

We pass a northbound boat. We're not close enough to read the name, and I'm not fast enough with the binoculars to get a close look at it. But the name of the company is emblazoned on the boat's side. It's Ingram Barge, another of the major players in the river economy. Headquartered in Nashville, Tennessee, it operates more than forty boats on the Ohio and Mississippi.

The watch changes again and shortly after Captain Davis takes the helm, we reach Marietta. We tie off the tow to pick up a barge, and the new addition means the tow must be remade, a complicated process that ends up taking most of this watch. In fact, it's 0100 before the tow finally is arranged to the captain's satisfaction and we're again on our way. At 0400, we make the Belleville Locks and Dam.

The Final Day

When Saturday dawns, the Ohio is locked in fog so thick that you can barely see the first barge in the tow much less those at its head. Captain Davis sends mate Jeff Brown out to the head of the tow with a portable radio, with instructions for him to keep a sharp eye out.

Ronnie Burge, now downstairs having his breakfast, long since has turned on the radar, and, like the captain, I track our progress on it. But his experienced eye picks out things that are either invisible or meaningless to me.

"See that there," he says, pointing to a speck of green light on the screen. "That's a fishing boat, I bet."

And, sure enough, when we reach the mouth of the creek ahead, there's a bass boat, with two good ol' boys fishing away.

By 0730, the fog has cleared off, and it turns out to be a beautiful summer day.

At 0810, we're at the Racine Locks and Dam, and once again, as they must each time we make our way through a lock, the deckhands make their way to their appointed stations. I remark on how hard their jobs are.

"You're right," agrees Captain Davis. "It's a hard life for the boys out there on the barges. And they've got nothing to look forward to except getting off. Of course, things will be a bit easier when they get the new

lock done down there at Gallipolis. With the bigger lock, you can eliminate a lot of your work out on the tows cause you won't have to work everything around that break in the tow that you have to have now."

At 1220, we arrive at the K.R.J. Fleet at Point Pleasant, where we drop one of the loaded barges. Here, we're assisted by a tug, which makes things go a great deal quicker and easier. Within five minutes, we're again on our way south. Six empties and two loads.

At 1310 we arrive at Gallipolis, only to find we face a long wait. There's another boat ahead of us, with a tow that will have to be broken into two sections. It's 1535 before the lock is ready for us and 1710 before we are on our way.

With Gallipolis behind us, it's only a matter of minutes before we're nearing Huntington. And at this point I pose a suggestion to Captain Davis that I've had in the back of my mind all day.

"You know," I say, "when we get back to the Ashland dock down at Kenova, I'll have to call somebody to come down there and pick me up. But when we go by Huntington's Harris Riverfront Park we'll just be a couple of blocks from the downtown and my office at the newspaper. If you could put me ashore there, I could just walk to my office. That really would be a heckuva lot easier for me."

I had thought Captain Davis might require some convincing regarding my proposition, but, to my surprise, he readily agrees to put the motorboat in the water and have somebody run me to shore. Maybe he's still feeling sheepish about having me shave off my beard and so wants to make it up to me.

I hurry below and get my gear together and am back on deck when, minutes later, Harris Park comes into view.

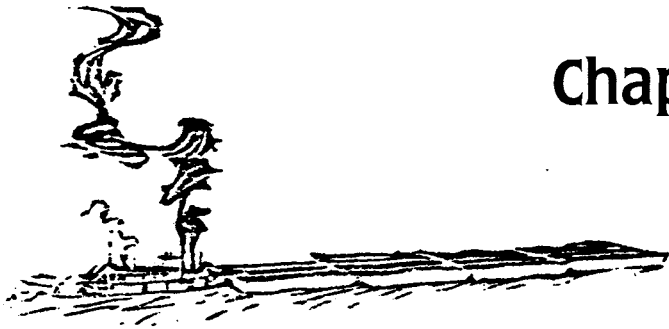
What's this? The park is crowded with hundreds—no, make that thousands—of people. Surely all these people aren't here to welcome me back home. Hardly. I've been gone eight days, and I know that it's Saturday but, without a calendar to hand, have no idea what today's date is. Still, after I think things over for a minute or so, it dawns on me that this is the city's annual "Summerfest" celebration which every July attracts thousands of people to the park for music, food, and fun.

I had envisioned that, once we reached port, I would seek out each member of the crew and thank him for his hospitality and cooperation, but my departure turns out to be so hurried that I only have time to mutter a brief "thanks" to Captain Davis before it's time to go. The motorboat is lowered into the water, and, as I start to climb down and into it, I realize that I have company. Two of the off-duty hands, seeing the crowd in the park, have convinced the captain to let them leave the boat for a few hours and catch up with it at the Kenova dock when it's time

for them to go back on watch. The captain must be in an especially good mood.

The motorboat pulls away, carrying us to the shore. The *Blazer* continues on its way, heading downriver. Soon it will be the end of another trip for the towboat and its crew.

We leap from the motorboat to the dock, and I quickly lose track of the two crewmen as they vanish into the crowd of fun-seekers. I stand for a minute and watch the *Blazer* as it continues down the river, then pick up my gear and head for my office.



Chapter 14

Kathy Gibbs wants to cue the skydivers and get things started, but first somebody's going to have to radio those two small planes that are buzzing the area and warn them to clear out and make way for the jumpers. A portable radio pressed to her ear, she stands looking skyward. With her radio in one hand, she uses the other to shade her eyes as she unsuccessfully searches the sky for the Huey helicopter that's carrying the jump team.

"Come on," she says, "we have to get started!"

It's Saturday, October 10, 1992, and more than 3,000 people have gathered on the West Virginia bank of the Ohio at the Gallipolis Locks and Dam for ceremonies marking the completion of its new, larger locks. It's been about three months since I ventured to Pittsburgh and back with the *Blazer* and her crew. Now I've come, along with the rest of the crowd, to see a bit of Ohio River history being made. As I wait for things to get under way, I can't help but think how long those aboard the *Blazer*, like virtually everybody who travels the Ohio, have been looking forward to this day. I wonder where the *Blazer* is today? Miles from here, I suspect.

More than twenty years of planning and five years of construction have culminated in today's opening of a new 1,200-foot main lock and 600-foot auxiliary lock, replacing the old 600-foot main and 360-foot auxiliary locks.

The old locks, opened in 1937, were located at the point of a bend, which made entrance to the facility very difficult on both the upstream and downstream approaches. The new locks are in a canal that cuts through the point and eliminates both the bend and the need to double-lock through the old locks. No longer will long tows of barges have to be broken into sections and locked through individually. And no longer will captains such as Ronnie Davis have to plan the makeup of every tow while keeping in mind how best they can break it in two sections at Gallipolis. As Lieutenant General Arthur E. Williams, chief of engineers with the Corps of Engineers, shortly will tell the assembled crowd: "The last major bottleneck to shipping on the Ohio River is gone."

Actually, Williams is slightly premature with that claim. Although seven towboats and a flotilla of twenty-five small boats will be locked through as part of today's dedication ceremonies, the new lock is still not 100 percent completed and will not go into regular service until January of 1993. But the October dedication date was selected to take advantage of the fall weather, before winter arrives. And it's turned out to be a beautiful day, perfect for a football game—or an outdoor ceremony. Indeed, it's the kind of day that Deputy Public Affairs Director Gibbs and her coworkers at the Huntington district of the Corps of Engineers have been praying for.

A picnic atmosphere prevails, with vendors selling food and drink to members of the rapidly growing crowd. People roam around the huge tract of ground. Some inspect the towboats lined up in the new lock, awaiting their moment of history. Others gather at a kiosk, where U.S. Postal Service workers are doing a brisk business, selling envelopes with a special commemorative cancellation designed for the big day. The envelopes carry a photo of the locks and dam, the commemorative cancellation, and a quotation from French philosopher and mathematician Pascal: "Rivers are moving roads." The quote seems a bit high-toned, but nevertheless appropriate.

Those intent on getting a good seat already have perched themselves on some of the hundreds of folding metal chairs arrayed before the portable stage where the day's speakers—the program lists more than a dozen—will hold forth. Significantly, much of what those speakers have to say will echo the sentiments that were voiced on the Senate floor by Kentucky's Thruston Morton thirty-five years ago on that summer day in 1957 when he talked about the Ohio Valley as "America's Ruhr."

There's march music from an Army band, and, once the stray planes have been chased away, four members of a Green Beret parachute team jump from their helicopter high overhead and float to the earth. And Kathy Gibbs breathes a sign of relief as master of ceremonies Joe R. Irwin gets the program started. Irwin is executive vice president and chief investment officer of PNC Financial Corporation in Pittsburgh and the chairman of DINAMO, the Association for the Development of Inland Navigation in America's Ohio Valley. Without the considerable lobbying and arm-twisting on the part of DINAMO and its members, it's unlikely the new locks would have been built.

By the time the first half dozen VIPs have had their turns at the microphone, some people already have heard enough speeches and have drifted off to the far edges of the crowd, where they can chat amongst themselves and enjoy the day, more or less oblivious to the remaining parade of speakers. Meanwhile, in the new lock, those aboard the wait-

ing towboats check their watches and wonder how many more speakers there are. Poised to lock through once the speeches are over are a half dozen boats: the sixty-two-year-old *J.S. Lewis*, with its steam-driven calliope barge; the *Orco*; the *Muskogee*; the *V.W. Meythaler*; the *Edwin A. Lewis*; the *Chip Lacey*; and the *Pioneer*, which participated in the 1938 ceremonies marking the dedication of the original dam.

Back on the platform, Ohio Congressman Clarence Miller is speaking. This is something of a farewell bow for him. Miller's congressional district was eliminated by redistricting and earlier in the year he lost a bruising primary battle to fellow congressman Bob McEwen, so he soon will be leaving the House.

Miller offers his listeners some intriguing examples of how much the world has changed since 1938, when the original Gallipolis Locks and Dam went into service: back then "Joe DiMaggio was playing for the New York Yankees, FDR was in the White House, Spencer Tracy won an Oscar, a hamburger cost fifteen cents, gasoline was less than a quarter a gallon, and John Kennedy was a freshman at Harvard. Things have changed . . .barge traffic on the nation's inland waterways has increased dramatically over the last twenty-five years. Huge convoys of barges—vital to the operations of American industry and business—now command the Ohio River and demand safe, swift, and sound passage through the series of locks lining the river."

Miller voices the expected thank-yous to his colleagues and those with the Corps of Engineers for their work on the Gallipolis project, then adds: "There is another equally important group of outstanding people we need to recognize today. I would like for any worker—contractor, construction worker, heavy equipment operator, carpenter, trucker, pipe fitter, or anyone who has had a shovel in their hands since groundbreaking to stand and allow us to applaud you."

It takes a minute for the congressman's words to sink in. And then people start getting up from the hundreds of metal chairs arranged in front of the stage. They rise slowly at first, one at a time, or by twos and threes, and soon many in the crowd are on their feet. Some shift from foot to foot or look around nervously, unaccustomed to being the focus of attention. When the applause dies, they quickly take their seats.

Ohio Congressman McEwen and West Virginia congressmen Nick Rahall and Bob Wise follow Miller to the podium. The crowd is growing increasingly restless. More people are beginning to drift away. But there's yet one more speaker—legendary West Virginia lawmaker Robert C. Byrd.

Byrd is introduced to the crowd by Charles Jones, the president of Amherst Industries in Charleston, West Virginia, and a longtime leader

of the river industry. Jones hails Byrd as the "champion" of the Gallipolis Locks and Dam, a claim solidified by legislation enacted by Congress changing the facility's very name—to the Robert C. Byrd Locks and Dam. (Its operations building will be renamed the Clarence E. Miller Lockhouse in honor of the retiring Ohio congressman.)

Bob Byrd has held more offices and won more elections than anybody in West Virginia political history. He has served in the U.S. Senate since 1959 and was majority leader for six years and minority leader for another six. Since 1989, the veteran Democrat has chaired the Senate Appropriations Committee and has used that post to steer federal funds to a long list of projects in West Virginia, including the Robert C. Byrd (nee Gallipolis) Locks and Dam. His detractors have dubbed him the "Prince of Pork," accusing him of wasting tax dollars on senseless pork-barrel projects. Byrd usually shrugs off such charges, but today he tackles them head-on. Byrd tells the crowd that some newspaper columnists, editorial writers, and others are certain to criticize the Gallipolis project as pork for the region, "but this is not pork. . . . What they refer to glibly as pork is infrastructure. . . . Those in the capital city of Washington believe anything built outside Washington is pork. . . . This is not pork. This is basic nutrition for the economic health of this nation."

The program's completion brings the release of three thousand helium-filled balloons, a barrage of fireworks—something less than impressive in the afternoon sun—and a calliope serenade.

Much Work Still Needed

It will turn out to be three more months before the new locks at Gallipolis goes into regular service. But just after 8:00 A.M. on January 30, 1993, lock operator Tom Payne blows a long mournful whistle that sounds the end of an era on the river.

At the sound of that whistle, the *J.S. Lewis* becomes the last vessel officially to lock through the old lock and depart southbound. Just prior to the *Lewis* entering the old main lock chamber the *Brother Collins* had departed northbound with a tow of fifteen loads, making it the last full tow to double-lock through the locks. And a few minutes later the *SuperAmerica* of the Ashland Oil fleet, with Captain Lonnie W. Ryan at the helm and a tow of eight loaded petroleum barges, becomes the first commercial tow through the dam's new 1,200-foot lock chamber.

With the bottleneck at Gallipolis finally broken, rivermen now are turning their attention to other projects. The Ohio River is the main shipping artery for the American heartland, and coal delivered to the many power plants that line its banks provides vital electricity for much of the

nation east of the Mississippi. Yet, rivermen correctly complain that they have had to make do with a system of locks and dams that, in many instances, dates back to the days of the steam locomotive and the Model T. Many of the old dams, they note, are deteriorating badly, literally crumbling away.

The 1981 National Waterways Study cited sixteen lock and dam facilities along the Ohio River and its navigable tributaries as "critically deficient" and serious hazards, not just to navigation but to the public safety. In the ten-plus years since that study, a good start has been made on addressing those problems, but there's still much to be done.

The Ohio River Basin includes sixty locks and dams, most of them old and, in many instances, too small and in generally poor condition.

On the Ohio itself, a 1990 report from the Corps of Engineers indicates that sixteen of the river's twenty locks and dams have main chambers that are 1,200 feet in length. With the completion of the new locks at the Robert C. Byrd Locks and Dam at Gallipolis, that figure became seventeen. The three remaining 600-foot chambers on the Ohio all are near its mouth—at the Emsworth, Dashields, and Montgomery dams—and the Corps of Engineers decided that, in order to hold down costs, the recent modernization of the three would not include new, longer locks. But now the Corps is taking another look at that questionable decision.

The Kanawha River's three locks and dams have twin chambers that measure 360 feet each. Such small locks mean delays, and delays mean higher costs. As somebody once put it: "It's like having an old-fahioned covered bridge right in the middle of the interstate." For example, Winfield Locks and Dam on the Kanawha is the busiest in the Ohio River Basin system in terms of lockage cuts. In 1989, it locked 18.8 million tons of cargo. Because of the small size of its locks, 19,351 lockage cuts were required to pass that tonnage. An average delay per tow of 336 minutes and an average chambering time of 174 minutes resulted in an annual cost to the industry of $8.1 million. By way of comparison, Smithland Locks and Dam at Mile 918.5 on the Ohio, with its 1,200-foot lock, passed 82.2 million tons in 8,830 locakge cuts. Its average delay was fourteen minutes, and its average chambering time forty-four minutes.

Currently the Corps of Engineers is working on a number of projects to improve or modernize the locks and dams on the Ohio and its tributaries.

The same 1986 legislation which authorized construction of the new locks at Gallipolis also gave the green light to three other projects: Grays Landing and Point Marion on the Monongahela River and Winfield on the Kanawha. All three are key points for coal traffic.

The replacement of Monongahela L/D 7 with the new Grays Land-

ing Locks and Dam (Mile 82.2) began in June 1988. The next structure will provide a 720-foot lock. Construction began in May 1990 on a new lock of the same size at Point Marion (Mile 90.8), replacing Monongahela L/D 8. Also, ground was broken at Winfield on the Kanawha (Mile 31.1) for a project which involves rehabilitation of the existing 360-foot locks and the construction of a new 800-foot lock. Work at Winfield was delayed by a dispute over contaminated soil at the site. It's now resumed, however, as the result of an agreement reached by the Corps of Engineers and the federal Environmental Protection Agency. The dioxin-contaminated soil will be stored on the site while construction proceeds and until a disposal method is agreed upon. Meanwhile, the Corps of Engineers and the EPA continue to trade charges with ACF Industries regarding responsibility for the contamination. Until 1985, ACF serviced and cleaned railway tank cars at the site, but the company insists it wasn't the source of the dioxin that's turned up.

In 1988, Congress authorized construction of a new $1.35 billion dam on the Ohio River at Olmsted (Mile 964). The new project, not far from the Ohio's confluence with the Mississippi, will boast two 1,200-foot locks and a dam with submersible gates that will allow the passage of tows during periods of high water. It will replace Locks and Dams 52 and 53. Traffic here is the heaviest anywhere on the Ohio, double the load carried on the St. Lawrence Seaway between Montreal and Lake Ontario. Yet, the permanent lock structures are just six hundred feet long and badly antiquated. They're supplemented by temporary locks that long since have exceeded their design life. Cracks are showing in the wall of Dam 53. The new facility is expected to take twelve years to build once construction starts. Current estimated completion date: 2006.

In 1990, Congress authorized improvements at McAlpine Locks and Dam on the Ohio at Louisville, Kentucky (Mile 606.8). McAlpine already has one 1,200-foot lock but nonetheless is on the verge of being swamped by rapidly growing Ohio River traffic. Plans call for replacing the current 600-foot auxiliary lock with a second of 1,200 feet.

Meanwhile, the Corps of Engineers is doing preliminary work on a number of other projects. On the Monongahela, L/Ds 2, 3, and 4 would be replaced with two modern lock and dam complexes. On the Kanawha, Marmet L/D and its twin 360-foot locks would be augmented with a new 800-foot lock. And, looking past the year 2000, the Corps of Engineers forecasts that increased river traffic could see several locks and dams operating at near-capacity by the turn of the century. That could lead to recommended upgradings and expansions at many of them.

Chapter 15

The dedication of the new, longer lock at Gallipolis was a day long dreamed of, not just by towboat crews, who saw an end to long delays and lots of backbreaking work, but by barge-line owners and executives forced to cope with the enormous costs resulting from the all-too-frequent holdups there. But the euphoria from the dedication had hardly worn off when President Bill Clinton handed the waterways industry a bombshell—a proposal that the tax on diesel fuel used by the industry's towboats be increased by $1 a gallon, from 19 cents to $1.19.

The proposal apparently caught the industry off guard. Comments from Clinton during his campaign, especially his frequently repeated concern about the urgent need to modernize the nation's aging "infrastructure," had prompted many rivermen to expect that he would be a friend and would look with favor on the necessary multimillion-dollar federal appropriations necessary to upgrade old, outmoded locks and dams.

But even though the Clinton administration's proposed fivefold increase in the fuel tax was something of a surprise to many, the thinking behind that proposal was far from new. For decades, there had been those who argued that waterway users should foot a substantial share—if not all—of the enormous bill for constructing and operating the various navigation improvements on the Ohio, the Mississippi, and their tributaries.

Free use of America's rivers dates back to the nation's earliest days. In 1787, the Continental Congress adopted the Northwest Ordinance, designed to make the territory northwest of the Ohio River more attractive to new settlers. Seeking to avoid the kind of bitter trade disputes that plagued relations between the original American colonies, which saw the colonies repeatedly tax and boycott each other's goods, the ordinance directed: "The navigable waters leading into the Mississippi and the St. Lawrence . . . shall be common highways and forever free."

That bold theme was underscored again, more than a century later, in the landmark River and Harbors Act of 1909, in which Congress pro-

claimed: "No tolls or operating charges whatever shall be levied or collected on any vessel . . . for passing through any lock, canal or canalized river."

And as recently as 1958, in a study of river transportation by its Civil Works Division, the Corps of Engineers flatly predicted: "If the Nation should impose user charges (on the rivers), it would lose more in benefits than it would gain in revenues."

Nevertheless, agitation to impose some sort of "user tax" on the waterways dates back at least to 1955 when the Hoover Commission urged Congress to impose tolls or "user charges" on companies operating towboats and barges on the nation's inland waterways. The proposal was immediately cheered by many in the railroad and trucking industries, who long had complained that federal funding of lock and dam construction and operation was, in fact, a subsidy.

On January 30, 1956, President Dwight Eisenhower, in his annual message to Congress, urged enactment of such a toll on waterway users. Eisenhower's proposal sparked immediate protests from those in the waterways industry, including Paul G. Blazer, the legendary founder of Ashland Oil. In "The Exception," Massie reports that within two weeks of Ike's request, Blazer was in Washington, testifying before a congressional committee and voicing his strong opposition to any user tax. Blazer pulled no punches in his testimony. "I thought," he remarked at one point, "that a policy that was in effect almost 170 years—free waterways—was reasonably stable" (324).

Blazer and other opponents of the tax won that particular skirmish but the war was far from over:

- In 1960, the U.S. Department of Commerce recommended a waterway fuel tax to be raised progressively, on a predetermined schedule, to ultimate full recovery of the cost of future waterway improvements as well as their operation and maintenance.
- In 1961, the Doyle Study Group recommended to the Senate Interstate and Foreign Commerce Committee a multiple system of tolls directed at the same goal.
- Also in 1961, the Van Zeldt-Beall Waterway Toll Bill was introduced in Congress. Its aim: imposing tolls that would not only go to the cost of future improvements but also recover the billions of dollars already spent on the lock and dam system.
- In 1962, President John F. Kennedy, who had spoken against river tolls during his campaign, turned around and asked Congress for a

2-cent-per-gallon excise tax on fuel oil transported on the inland waterways.

- In 1965, President Lyndon Johnson picked up where the Kennedy administration had left off and voiced strong support for a fuel tax "to extend the principle of user charges to inland waterways." Specifically, the Johnson administration called for an immediate 20 percent increase in the fuel tax and the phase-in of additional increases later.
- In 1971, President Richard Nixon proposed a user tax package that would levy freight taxes on commercial tows based on the tonnage carried, the miles traveled, and the cost of operating and maintaining navigable channels in each river segment. The Nixon administration also proposed a "lockage fee" for recreational boaters.
- In 1973, the congressionally appointed National Water Commission urged that fuels taxes and lockage fees be imposed on waterway users.
- In 1974, President Gerald Ford proposed the "Waterway User Tax of 1974," which was more or less copied on Nixon's unsuccessful 1971 proposal.

The proposals continued, year after year after year, with the waterways industry continuing to battle each of them but winning by margins that were progressively thinner. Finally, in 1978, reluctant rivermen and President Jimmy Carter forged a compromise: a 10-cent-per-gallon tax was enacted in return for an immediate start on a desperately needed replacement for Lock and Dam 26 on the Mississippi.

Clinton Tries to Change the Rules

In 1985, the industry agreed to accept a doubling of the fuel tax, from 10 cents to 20 cents by 1995, with an aim of paying half the cost of future navigation projects. The new $224 million lock installation at the Robert C. Byrd Dam at Gallipolis was the first project built under that arrangement.

But, shortly after moving into the White House, President Clinton proposed to increase the tax yet again—in spectacular fashion. In a February 17, 1993, speech to Congress and the nation, Clinton offered the broad outline of a package of proposed spending cuts and tax increases, aimed at bringing down the federal deficit. The next morning, the federal Office of Management and Budget released "A Vision of Change for

America," a 150-page document outlining the details of Clinton's proposed chages. Veteran watchers of what happens in Washington know that often "the devil is in the details," and this indeed proved another example of that time-honored rule. Buried on Page 76 of the document was a section entitled "Phase-In Increased Inland Waterways User fees." The statement read:

> The Nation's inland waterways are the most heavily subsidized form of commercial freight transportation. Since the system was constructed for commercial navigation beneficiaries, they should pay for all operation and maintenance costs. Existing waterway fuel taxes collected on applicable segments of the system only offset half of the Corps of Engineers' cost of construction and major rehabilitation (estimated at $430 million in 1993). This proposal would increase the 1994 federal inland waterway fuel tax from 19 cents to $1.19 per gallon in a series of increasing steps to a total of $1.00. Estimated savings are $460 million in 1997, $820 million over four years.

Reaction from leaders in the river industry was immediate and unanimous. They pointed out that a typical towboat on the Ohio or Mississippi uses a gallon of fuel per horsepower per day. Thus, by 1997, the additional tax burden on a 5,000-horsepower boat would be $2 million a year. Harry N. Cook, president of the National Waterways Conference, flatly predicted that, if enacted, the additional tax "would practically guarantee the demise of the inland waterway system," with an "overwhelmingly adverse" impact on the nation's economy.

In sounding their opposition to the Clinton proposal, rivermen cited a long list of objections—and two basic "misconceptions." A position paper issued by the National Waterways Conference noted that in urging approval of the new dollar-a-gallon tax, the Office of Management and Budget described the inland waterways "as the most heavily subsidized form of commercial freight transportation." This, the conference countered, "is a characterization which the Congressional Budget Office has repeatedly used, but it is blatantly misleading. In terms of total federal investment or subsidy per ton-mile, the waterways do not stand out. Only when waterway outlays are computed as a percentage of the freight bill, as CBO insists on doing, do barge lines look bad. If their rates were higher, CBO's formula would show that their subsidy was lower."

The second misconception, the conference said, rested on the claim that the waterways were "constructed for commercial navigation beneficiaries." Not so, the rivermen insisted, noting that most rivers were

improved for "multiple public purposes," including not only navigation, but also recreation, drinking water, dependable supplies of water for power plants and other industries, hydropower, and flood control. As for navigation, the Waterways Conference noted that, even then, Uncle Sam "provides only the in-channel improvements. Substantial non-federal investment in docks, elevators, terminals, etc., is required to make a navigation system viable. Full recovery of operation and maintenance costs would end this long-standing federal-private sector partnership."

But perhaps the river industry's most telling arguments against the proposed tax involved its ripplelike effect on the nation's economy as a whole. River transportation is by far the least expensive mode of transport, thus every ton of freight carried by barge represents a cost savings to someone. This translates into a host of benefits: The customers of the many power plants that burn coal transported by the Ohio River enjoy less expensive electricity than most other power customers. Meanwhile, the low tariffs charged by the barge lines hold down the rates charged by the competing railroads and truck lines. A new fuel tax would mean higher rates for transporting coal, and that, in turn, would mean higher electricity rates for millions of Americans. A new fuel tax also would handicap the barge lines in competing with the railroads and trucks. And, until somebody figures out how to repeal the law of supply and demand, lessened competition invariably means higher prices.

As part of its campaign against the Clinton proposal, the industry offered a study by Mercer Management Consulting of Lexington, Massachusetts, warning that the proposed $1-a-gallon fee could cost as many as thirty-three thousand jobs in the Ohio Valley by the year 2000. The study projected that new fee could add as much as $4 a ton to the cost of coal barged to the Gulf of Mexico. The result: the loss of an estimated thirteen thousand mining jobs in West Virginia and Kentucky.

Maybe it was those grim statistics. Maybe it was some impressive arm-twisting by key lawmakers opposed to the administration's proposal. Maybe it was a bit of both. But, when the smoke cleared from the 1993 budget battle, the administration's proposed tax had vanished.

First, the House of Representatives cut the proposed fee from $1 to 50 cents. Then the Senate, in its budget bill, eliminated the fee entirely. And a joint Senate-House conference committee followed the Senate's lead, leaving the fee out of its conference report altogether.

The budget bill finally enacted by Congress and signed into law by President Clinton included an increase of 4.3 cents per gallon in the federal tax on gasoline and diesel fuel, but rivermen had relatively little problem with that because, unlike the hated user fee for commercial river traffic, it applied to all modes of transport equally.

Chris Brescia, president of the Midwest Area Rivers Coalition 2000, told the *Waterways Journal* (August 9, 1993) that the wide-ranging impact of the proposed user fee led to its demise: "In the final analysis, it's a reflection by Congress of the importance of the waterways, of the fact that the data just wasn't there to support this kind of initiative, and that it became very clear that the economic repercussions were not going to be positive."

While it was pending, however, the Clinton proposal cast a pall of uncertainty over the river industry. On August 9, 1993, Equitable Shipyards in New Orleans, a subsidiary of the Trinity Marine Group, held keel-laying ceremonies for two new 85-foot towboats under construction for the Corps of Engineers. Speaking that day, John Dane III, president of Trinity Marine Group, noted that "not a single barge was sold to a waterway user from the time Clinton announced the fuel tax proposal until it was a certainty the tax would not be included" in the budget. And Dane noted his firm received an order for construction of forty new hopper barges shortly after the "death" of the proposed tax (*Waterways Journal,* August 16, 1993).

Wary rivermen, however, fear they haven't heard the last of the user fee idea. And they note that the latest proposals to increase the tax burden on the waterways industry are coming at a time when it's already been hit hard by recession. It's estimated that where there were six hundred barge operators on the Ohio and Mississippi in the 1970s, there are now fewer than three hundred—the result of bankruptcies and mergers.

Still More Problems

Future Washington infighting between river interests and their rail and highway opponents seems an absolute certainty, with no guarantee as to the outcome. Moreover, the future of the Ohio as a watery highway is also clouded by a number of other problems, some of which stem from continued scuffles between the Corps of Engineers and worried environmentalists who insist that if the Corps had its way there soon wouldn't be a free-flowing stream left anywhere around. As one unidentified critic, quoted in Johnson's *Men, Mountains, and Rivers,* complained: "The Corps, like the beaver, frequently builds dams that aren't needed, but the beaver doesn't do it at taxpayer expense" (235).

Meanwhile, some landowners along the Ohio complain that the locks and dams built by the Corps have drastically accelerated the rate of riverbank erosion, causing their property to all but crumble away before their eyes. As far back as the 1930s, the Corps conceded the possibility that new high-lift dams might cause serious instances of what it calls

"bank failure." And in a 1969 report to the Secretary of the Army, the Corps wrote: "The flowing stream is a dynamic entity, constantly seeking to establish a state of equilibrium or steady relationship among its discharge; amount and type of sediment load; channel width, depth and slope; velocity; and the material forming it bed and banks. If one of these variable is altered, a stream that was formerly in equilibrium will attempt to change one or more other variables and reestablish that state."

Owners of property along the Ohio complain that the higher pool has ruined beautiful bottom land that had been successfully farmed for several generations and that low spots which used to dry rapidly after high water now take longer to do so, with some remaining marshy all the time.

A number of lawsuits have been filed and have been fought back and forth in the courts for years. The Corps says it's continuing to study the problem. Landowners and other critics respond that the problem has been "studied to death," that what's needed isn't more study but action.

On a similar note, there's an increasing concern that wetlands along the river are rapidly disappearing, falling victim to those who would pave over every acre.

Wetlands are swamps, bogs, and marshes with very wet soil. They function as natural filters, cleaning rain and runoff before they discharge below ground or into streams and rivers. And they are spawning, nesting, or feeding grounds for one-third of all U.S. endangered species, half of all migratory wildlife, and the majority of fish species. The Environmental Protection Agency estimates that in two hundred years, the continental United States—or "the lower forty-eight," as it's sometimes called—has gone from 230 million acres of wetlands to 100 million. Nearly 300,000 acres continue to be lost each year. The states along the Ohio River have recorded truly staggering losses of wetlands, topped by a huge 90 percent for Ohio.

The need to protect existing wetlands is an important consideration in planning any new navigation project on the Ohio. When construction of the new longer locks at the Robert C. Byrd Dam at Gallipolis disrupted wetlands at that site, the Corps of Engineers purchased 800-plus acres of wetlands just downstream from the dam to replace the lost tract. Similarly, any plans for new private construction along the river must deal with a broad range of environmental considerations—including any possible loss of wetlands.

Then there's the pollution problem. In 1948, the Ohio River states, recognizing that the river had become a virtual sewer, banded together and, with the blessing of Congress, formed an interstate compact—the Ohio River Valley Sanitation Commission (ORSANCO)—dedicated to

halting pollution of the river by cities and industries along it. Subsequent federal legislation put teeth in antipollution regulations and provided grant money to build sewage treatment facilities. The change has been dramatic. When the commission was organized in 1948, sewage-treatment facilities were provided for only one of every one hundred persons along the Ohio's banks. Today, that figure is virtually 100 percent. And there's been a comparable decline in industrial pollution.

Today's concern about keeping the river clean has transformed the daily routine on the river's towboats. Time was, years ago, when every towboat galley had a chute which enabled the cook and crew simply to dump into the river any leftover food or other kitchen waste. Since owners often grumbled that they could see much of their profit go into the river when cooks and crew wasted food, the chute was called "the money hole." Today's towboat is equipped with rubber garbage cans more or less identical to those in your backyard, and, in many instances, the galley boasts a trash compactor as well.

Though today's river is significantly cleaner than that of the 1940s, it's still far from pristine, as can be seen by the amazing amount of debris and litter deposited along its banks by high water, much of it the result of careless and thoughtless actions by individuals. Walk a short stretch of riverbank and you'll likely see discarded plastic cups and containers, cans and bottles of all kinds, old tires and maybe even a discarded refrigerator or TV set—all of which ended up in the river because someone dumped it.

Beginning in 1989, ORSANCO teamed up with Ashland Oil for a one-day effort at cleaning up a 120-mile stretch of riverbank from Portsmouth to Cincinnati on the Ohio side of the river and from Boyd County to Boone County on the Kentucky side. More than one thousand volunteers collected thousands of pounds of trash in what Alan Vicory, ORSANCO's executive director, described as "one of the most ambitious, multi-state conservation efforts ever attempted."

Dan Lacy, Ashland Oil's vice president of corporate communications, described the company's sponsorship of the cleanup effort as a logical extension of the company's longtime commitment to keeping the Ohio clean and safe. "Throughout our history," Lacy noted, "Ashland has relied on the waters of the Ohio to carry our products to customers throughout the Ohio Valley and beyond. We feel an important need to make sure that the river is safer for continued use."

Encouraged, organizers of what was christened the "Ohio River Sweep" have made it an annual event that's now staged every summer along the entire length of the river. The various state environmental agencies have enthusiastically joined the effort, and the list of corporate spon-

sors now includes not just Ashland Oil but a host of other companies with facilities along the Ohio River, including American Electric Power, ARCO Chemical Company, BASF, Dow Corning, Dupont, GE Plastics, Louisville Gas and Electric, Louisville Water Company, Miles Inc., Neville Chemical, the Ohio River Company, Procter and Gamble, and Wheeling-Pittsburgh Steel. Donations from the participating companies pay for T-shirts presented to participating volunteers, promotional literature, mailings, and the other outlays necessary for a successful effort. Obviously, volunteers can't comb every inch of riverbank, but teams work at sites near virtually every community on the river. The 1993 cleanup saw more than 17,000 volunteers pick up approximately 13,000 tons of trash at 335 sites. Children have been particularly instrumental in promoting the Sweep, reports Jeanne Ison, who directs the annual project for ORSANCO. "It's a great family-oriented project. I'm always impressed with the number of kids who show up with parents in tow."

The River Flows On

Riverbank erosion, disappearing wetlands, the pollution, litter, and trash that mar the river and threaten the health and safety of those who use it—tackling these and other Ohio River problems will sorely test the ingenuity of this and future generations who live along its length. But the Ohio has always represented a challenge.

As we have seen, the river encountered by the Ohio Valley's first white settlers was a vital but undependable roadway. From low water to flood stage, the river could rise dramatically in a matter of days. In summer it could dry up and virtually disappear in places. In winter, ice gorges might make passage impossible. The great coal tows which were assembled at Pittsburgh often had to wait months for a "coalboat stage" that would provide enough water to sweep them down the river. Even then, once they were on their way, disaster could await them in the form of an unanticipated snag or sandbar lurking just around the next bend.

The efforts of the Corps of Engineers changed all that, transforming the river into the broad, dependable artery of commerce we know it as today by building a network of fifty dams, creating fifty level navigable pools. As brought to completion in 1929, the canalization of the Ohio to a 9-foot navigable depth along its entire 981-mile length was a remarkable feat of engineering.

But by 1950, a system of locks and dams that had been designed to handle thirteen million tons of cargo a year was confronted with a yearly total of forty-nine millions tons. At the same time, the new twin-screw diesel towboats that were replacing the familiar steam or diesel-pow-

ered sternwheelers were pushing 1,000-foot tows that dwarfed the 600-foot lock chambers at the river's old dams. The result was the decision by the Corps and Congress to undertake the modernization of the river that continues today. The pace of that modernization promises to be directly tied to the ongoing political tug-of-war being waged by the White House, Congress, state governors and legislators, environmentalists, members of the waterway industry, and their counterparts in the railroad and trucking industries. Meanwhile, it's clearly impossible to make any concrete predictions about what will happen to Ohio River commerce—and the many industries and communities that rely on it.

A 1974 report issued by the Corps of Engineers indicated that inland waterways tonnage had tripled over a forty-year period. At the same time, the average length of haul increased from 50 to 375 miles. As a result, the ton-miles of traffic generated increased more than twentyfold. Moreover, thanks to mechanization, crew size for the typical towboat was cut in half, meaning that productivity per man was increased fortyfold.

From our viewpoint today, it seems that barge tows are about as long, locks about as big, and towboats about as powerful as they're likely to get. After all, the Ohio eventually offers physical limits. No matter what we do, the bends in the river are still there and the water is only so deep. Yet, tows of one thousand feet and more, powerful diesel engines, the all-seeing eye of radar, the miracle of telecommunications all are remarkable things undreamed of by the rivermen of yesteryear. What wonders might the next decades bring that today we can't envision?

As we muse on that intriguing question, we might do well to keep in mind a thought-provoking observation offered by President Herbert Hoover to the thousands of people who gathered for the Cincinnati ceremonies which marked the 1929 completion of the river's canalization. Hoover reminded his listeners that whatever mankind does, no matter how remarkable it may seem, is only temporary.

"It is the river that is permanent," Hoover said. "It is one of God's gifts to man, and with each succeeding generation we will advance in our appreciation and our use of it. And with each generation it will grow in the history and tradition of our nation."

River Talk—A Glossary

abeam: At right angles to the keel of the boat.
aboard: On or within the boat.
abreast: Side by side.
adrift: Loose, not moored.
aft: Toward the stern (rear) of the boat.
aground: Touching or fast to the bottom.
ahead: In a forward direction.
all clear: The boat and barges (if any) are clear of obstructions (towboating term).
astern: In back of the boat, the opposite of ahead.
back'er down: Stop the tow's headway. Reverse engines.
barge: A nonpowered, flat-bottomed vessel designed to be pulled or pushed by a boat.
beam: The greatest width of a boat (or barge) hull.
below: Beneath the deck.
bitt: A post projecting, often in pairs, above the deck of a boat or barge, used for securing lines (sometimes called a *bollard*).
boot top: A painted line that indicates the designed waterline.
bow: The forward part of a boat's hull.
bow line: A docking line leading from the bow.
bridge: The location from which a boat is steered and its speed controlled (more often called the *pilothouse*).
bulkhead: Any vertical partition (wall) separating compartments.
bullnose: The upstream and downstream ends of a river lock's center wall, separating the main and auxilliary locks.
buoy: A distinctively shaped and marked float, used to mark the channel or warn of a hazard.
cabin: A sleeping compartment for passengers or crew.
Cairo, Illinois: While named for its Egyptian cousin, this river town is pronounced "kay-row," like the well-known brand of corn syrup. Situated near the Ohio's confluence, or junction, with the Mississippi, Cairo today is a drowsy little town that bears scant resemblance to the rip-roaring riverboat town it once was.
capstan: A large metal spool placed on a boat's deck which may be revolved

manually or mechanically and upon which cable or rope can be "wound up" to make secure ties.

capstan bar: A wooden club or metal bar inserted in a hole provided in the capstan to facilitate the winding operation (often called a *cheater bar*).

cast off: To let go.

chamber: That portion of a lock which contains the vessel(s) being locked through.

channel: The deepest portion of the river, a sort of river within the river.

chart: A map used for navigation purposes. On the Ohio and other inland waterways, navigation charts are published as spiral-bound books, with each page depicting a few miles of the river. Issued by the U.S. Army Corps of Engineers, the books chart the channel lines, list mile point, locks and dams, bridges, underwater and aerial pipeline, and wire crossings and shows aids to navigation, river terminals, boat launching ramps, and so forth.

cheater bar: A capstan bar, used for leverage in turning it. Or for tightening the ratchets which connect the wires used to lash barges together.

chokin' a stump: Pulling up to the riverbank and tying up to a tree. Before radar, this was about all a riverboat could do when the fog rolled in.

cleat: An anvil-shaped deck fitting to which lines are secured.

covered barge: A barge having hatch covers over its compartments and used for grain, soybeans, coffee, salt, sugar, paper products, packaged goods, or other cargo that needs protection from the weather. A typical covered barge is 195 feet long and has a capacity of 1,500 tons.

cut her loose: Unite all lines, take up rigging.

dam: A barrier to obstruct the flow of the river. Large, seasonal swings in rainfall and snow melt produce wide variations in the quantity of water flowing in the Ohio and other rivers, hence the need for a network of dams to regulate the river and maintain a steady, year-round depth.

davits: Mechanical arms extending over the side or stern of a boat to left a smaller boat.

day-mark: A shore-mounted sign, distinctly shaped and painted and affixed with a reflective border. Used as aid to navigation.

dead ahead: Directly ahead.

dead astern: Directly aft.

deadhead: A person traveling aboard the boat who isn't part of the crew but pays no fare. In the steamboat era, it wasn't usual for a captain's wife to deadhead with him. In my own case, I was deadheading when I traveled aboard the *Paul G. Blazer*. Also, cargo is said to "go deadhead" when it's carried at no charge.

deck: The permanent covering over the hull. Also, used to describe each level of a multilevel boat.

deck barge: A flat barge used for cars, trucks, construction equipment, oil rigs, and other heavy cargo. A typical deck barge is two hundred feet long and has a capacity of two thousand tons.

deckhand: On a towboat, the crew members who couple and uncouple the barges, keep the boat clean and perform countless other chores.

dinghy: A small open boat. A dinghy is often used as a tender for a larger boat.

dock: A spot where boats and barges can moor. *See also* pier and wharf

doghouse: An enclosed work area on the main, near the bow, of a towboat. It's from the doghouse that the boat's deckhands make their way to and from the barges. It also is the place they seek shelter from the weather.

downstream: With, or in the direction of, the current.

draft: The depth to which the hull of a towboat or barge is immersed with a given load.

dredging: The removal of sand, silt, mud, and debris from the bottom to keep a channel or harbor open for navigation.

drift: Driftwood or any other debris floating in the river. Also, the motion of a boat that's floating along without power.

dry dock: A large platform capable of lifting a vessel out of the water for repairs and maintenance.

ease: To slacken or relive tension on a line.

engineer: The individual in charge of operating and maintaining the towboat's engine(s).

even keel: When a boat is floating on its designed waterline it is said to be on an even keel.

excursion boat: A passenger boat outfitted to carry large numbers of people on daytrips but with no stateroom accommodations for overnight stays.

fast: Said of an object that is secured to another.

floating bitt: Mooring devices which are mounted on tracks set into the wall of some locks. They float up and down as the water level changes, meaning that a boat using them doesn't have to feed out or take in line as the water level goes up or down.

forward: Toward the bow of the boat.

fouled: Any piece of equipment that is jammed, entangled, or dirtied.

freeboard: The minimum vertical distance from the surface of the water to the gunwale.

galley: The kitchen area of a boat.

gunwale: The upper edge of a boat's sides (pronounced as "gun'l").

harbor boat: A small, low-powered boat used in a harbor or other small area.

head: A marine toilet.

headway: Forward movement by a towboat, with or without barges. The opposite of sternway.

heave to: To bring a boat up in position where it will make little or no headway.

helm: The tiller controlling the rudder.

hopper barge: An open compartment barge used for coal, steel and ore, sand and gravel, lumber, and other cargo that doesn't need protection from the weather. A typical hopper barge is 195 feet long and has a capacity of 1,530 tons.

hull: The main body of a boat.
keel: The centerline of a boat hull, running fore and aft. In a sense, it's the boat's "backbone."
kevel: A sturdy bitt or bollard on which the heaviest lines may be secured.
kill out tow (or, kill 'er out): To back up with towboat until headway is stopped.
knockout single: To uncouple the barges from the towboat and lay alongside the barge(s) during lockage.
knot: A measure of speed equal to one nautical mile (6,076 feet) per hour.
kort nozzle: A cylindrical fitting around a propeller, tapered inward toward the stern to increase thrust and maneuverability.
ladder: Any set of stairs or steps aboard a boat.
lead barges: The head of first barge(s) of a tow.
leeway: Sideways movement of a boat caused by either wind or current.
left bank: The banks of navigable rivers are identified as "right bank" or "left bank" based on the direction in which the river flows. Thus, the east bank of the Ohio, which flows south, is its left bank.
light boat: A towboat without a tow.
line: Rope and cordage used aboard a boat.
lock: A chamber built into a dam, used to pass towboats and barges from one level of water to another.
lockage: Passage through a lock at a navigable dam (often called "making" such-and-such lock).
lock gates: Movable doors at either end of a lock chamber which allow traffic to pass through it.
lockmaster: The individual in charge of operating a lock.
log: A written record of the boat's operation.
loose head: Light boat (boat without tow) getting under way.
mainline tows: Tows that regularly run up and down the principal waterways as opposed to working in a smaller geographical area, such as a harbor.
making headway: To proceed forward.
making tow: The process of coupling barges into a tow.
manifest: A list of each barge and what it contains.
on the bank: A general term used to describe anything or anybody who is ashore, rather than on the river. Often used to describe those who have left the river for other pursuits, as in "He's on the bank now."
packetboat: An early steamboat designed to carry freight on its decks and passengers in staterooms. As the railroads eventually lured most passengers, the packets gave way to towboats that had no passenger accommodations and, instead of carrying fright on their decks, pushed cargo-loaded barges.
pay out: To ease out a line, or let it run in a controlled manner.
pier: A loading platform extending at an angle from the shoreline. *See also* dock and wharf
pike pole: A long pole with a hook on one end, used for pulling in a line or other object that is used and for pulling in a line or object that is out of reach.

Often marked and used for measuring water depth (sometimes called a *spike pole*).

pile: A wood, metal, or concrete pole driven into to the bottom. Boats and barges can be made fast to it, or it may be used to support a pier.

piling: Support for wharves, piers, etc.

pilot: The second in command on a towboat.

pilothouse: The location from which a towboat is steered and its speed controlled (sometimes called the *bridge*).

pool: That stretch of river backed up behind a particular dam. For example, the "Racine Pool" extends up the Ohio for 33.6 miles, from the Racine Locks and Dam at Mile 237.5 to the Belleville Locks and Dam at Mile 203.9.

port: The left side of a boat when looking forward.

rigging: The general term for all the lines of a boat.

right bank: The banks of navigable rivers are identified as "right bank" or "left bank" based on the direction in which the river flows. Thus, the west bank of the Ohio, which flows south, is its right bank.

rope: In general, cordage as it is purchased and brought on board. Once it's aboard and put to use, it's known as "line."

rudder: A vertical plate or board for steering a boat.

running economy: Operating a towboat at a reduced speed in order to conserve fuel.

running lights: Lights required to be displayed by boats under way between sunset and sunup.

screw: A boat's propeller.

secure: To make fast.

slack: Not fastened, loose. Also, to loosen.

sogging: Scrubbing or washing down any part of the boat.

splitting on the heads: When a towboat is faced up to the center of two strings of barges.

stage: A gangway that is used to board passengers. It's said the term, a relic of the steaboat era, developed because the crew used to put on a show for townspeople when the boat was docked.

standard barge: A barge is that 26 feet wide by 175 feet long and may be open or closed type.

starboard: The right side of a boat when looking forward.

steersman: A person apprenticed to learn the buisness of piloting, a cub.

stern: The aft part of the boat.

stern line: A docking line leading from the stern.

stow: To put an item in its proper place.

striker: An apprentice engineer, he's expected to keep things shipshape in the engine room.

string: Three or more barges coupled end-to-end.

tank barge: Type of barge used for crude oil, petroleum products, liquid fertilizer, industrial chemicals, orange juice, or other liquid cargo. A typical

tank barge is 297 feet long and has a capacity of one million gallons.

tankerman: A crewman licensed by the Coast Guard as competent to handle liquid fuels and cargoes.

tiller: The board or handle used for turning a boat's rudder.

timberhead: One or two upright mushroom-shaped pins on the head and stern of a barge, used for the coupling of barges for end-to-end towing.

topsides: The sides of a vessel between the waterline and the deck. Sometimes used to refer to anything or anybody on or above the deck.

tow: A group of barges connected into a solid fleet by use of wire cables.

towboat: A motorized river vessel (boat) designed primarily to push barges.

towing knees: Heavy steel fixtures on the bow of a towboat to enable them to push against the stern of the barges.

trim: The fore and aft balance of a boat.

turn a tow: When a towboat meets another towboat (belonging to the same company and proceeding in the opposite direction), exchanges its entire tow, and returns in the direction from which it came.

under way: In motion.

up the hill: Anywhere out of sight of the river is up the hill. *See* on the bank

upstream: Against the current.

wake: The track of waves left by a passing boat.

wall: The sides of a lock.

waterline: A line painted on a hull which shows the point to which a boat sinks when its is properly trimmed. *See* boot top

western rivers: A encompassing term used to describe all the rivers that flow into the Gulf of Mexico, including the Mississippi, the Ohio, and so forth. The phrase, admittedly confusing. was coined long before the United States reached westward to California.

wharf: A man-made structure used for loading or unloading vessels. *See also* dock and pier

wharfboat: A nonmoving boat used for a terminal at a wharf. Often the engine has been removed and used in another craft or sold for scrap.

wheel wash: Originally, the turbulence behind the paddlewheel of a steamboat but sometimes used to describe the same turbulence kicked up by a modern towboat which, of course, has no paddlewheel.

wires: A short length of wire of varying sizes used to couple barges within a tow. They usually are of standard length to span the distance from one timberhead to another and are tightened with ratchets. Wires used for specific purposes included tow wire, backing wire, face wire, stem wire, scissor wire, and lashing.

yaw: To swing off course.

Bibliography

For years, I have been reading and then filing away various newspaper and magazine articles about the Ohio River and especially about the vital role it plays in the economy of the region it traverses. When I first started doing so, I had no idea I might someday tackle a book on that theme. It was simply my "pack rat" nature at work. Even so, much of that information has found its way into this book in one form or another, while some of it provided me helpful clues about where to go and who to see in my quest to learn more about the river.

When my casual reading turned to genuine research, I found myself turning again and again to the following sources. I've listed the usual bibliographic information for each, then appended a sentence or so by way of description. If this newspaperman's own modest effort perhaps has piqued your interest in the Ohio River and its story, here's where you can go to learn from the genuine experts:

Ambler, Charles Henry. *A History of Transportation in The Ohio Valley.* 1932. Glendale, California: Arthur H. Clark. Its subtitle aptly summarizes this book's particular usefulness: *With Special Reference to Its Waterways, Trade and Commerce from the Earliest Period to the Present Time.*

Banta, R.E. *The Ohio.* 1949. New York: Rinehart. A volume in the classic "Rivers of America" series, Banta's book is especially useful for its long, detailed history of the Ohio Valley's early settlement and the contest between the French and English to control the valley.

Bates, Alan L. *Belle of Louisville.*1965. Berkeley, California: Howell-North. Bates was consulting architect during the restoration of the *Belle,* and that handsome old boat is the particular subject of this thin volume, but Bates provides much useful information about steamboats and steamboating in general.

Brand, Irene B. "Boat Building at Point Pleasant." *Goldenseal* (Winter 1990): 35-41. The writer profiles the boat- and barge-building business in this Ohio River town, from its beginnings in the mid-nineteenth century until the last boatyard closed in 1967.

Casto, James E. *Huntington: An Illustrated History.* 1985. Northridge, California: Windsor. Modesty tempted me to omit this particular volume from this bib-

liography, but since I have listed the companion Windsor volumes on Charleston and Wheeling, it seems only reasonable that this one also be included.

Fetherling, Doug. *Wheeling: An Illustrated History.* 1983. Woodland Hills, California: Windsor. "Wheeling was a river town," writes Fetherling, who then details the vital (and colorful) role the city played in the growth of Ohio River commerce.

Fowle, Barry W., ed. *Builders and Fighters: U.S. Army Engineers in World War II.* 1992. Fort Belvoir, Virginia: Office of History, U.S. Army Corps of Engineers. This thick paperback offers a series of essays on the activities of the Corps of Engineers during World War II. All make for interesting reading, but for the purposes of this book the significant essay is "Mobilizing The Waterways: The Mississippi River Navigation System," by Michael C. Robinson.

Geus, Theodor. *The Mississippi.* 1989. Lexington: University Press of Kentucky. Yes, I know this is a bibliography about the Ohio River. But in the course of my research I figured it wouldn't hurt to read up a bit on the Mississippi, and I found that Geus had much to say about the steamboat era that applied just as well to the Ohio as to Big Muddy.

Johnson, Leland R. *An Illustrated History of The Huntington District, U.S. Army Corps of Engineers, 1754-1974.* 1977. Washington: U.S. Government Printing Office. Although his primary focus is, obviously, the Huntington District of the Corps of Engineers and its handiwork over the years, Dr. Johnson provides invaluable information on virtually every facet of Ohio River history. A new, updated edition is in the works. If I could recommend only one book on Ohio River history, this would be it.

Klein, Benjamin F., ed. *The Ohio River Handbook and Picture Album.* 1958; rev. 1964. Cincinnati: Young and Klein. The hodgepodge nature of this curious little volume can be irritating—and, alas, its index is not always reliable. Nevertheless, it's a genuine gold mine of river trivia.

Lavendar, David. *The Great Persuader.* 1970. Garden City, N.Y.: Doubleday. Those who would seek details about the relationship between railroad mogul Collis P. Huntington and the city of Huntington will have to look elsewhere than this biography, for California historian Lavendar dismisses the city with one brief paragraph. Nevertheless, this volume is essential to any student of Collis P. Huntington's fascinating life.

Massie, Joseph L. *Blazer and Ashland Oil: A Study In Management.* 1960. Lexington: University of Kentucky Press. Massie provides a helpful insight on the role the Ohio River played in founder Paul Blazer's vision for Ashland Oil.

Ohio River Navigation: Past, Present, Future. 1979. Cincinnati: Ohio River Division, U.S. Army Corps of Engineers. An informative little booklet published as part of the fiftieth anniversary of the establishment in 1929 of a nine-foot navigation channel on the Ohio, a truly significant milestone in the river's history.

"Ohio River Navigation System, 1990." Cincinnati: Ohio River Division, U.S. Army Corps of Engineers. Published every two years, this report provides the standard source of statistical information about the Ohio River naviga-

tion system and the river's commerce, as well as providing in convenient form an overview of the river and the efforts by the Corps to manage it.

Owen, Dan, ed. *Inland River Guide.* 1993 edition. St. Louis: Waterways Journal. Updated annually, this handy, spiral-bound volume lists names, telephone numbers, and other useful information for barge and towing companies, terminals, fleeting and harbor services, tankermen, shipyards and repair facilities, contractors and dredging, refuelers and boat stores, brokers, divers, manufacturers of river gear, and so forth.

Owen, Dan, ed. *Inland River Record.* 1993 edition. St. Louis: Waterways Journal. Published annually since 1945, this hardcover book lists more than four thousand commercial towboats and tugs, Corps of Engineers and Coast Guard vessels navigating the Mississippi and the Ohio and their tributaries, the Gulf Intercoastal Waterway, and the Warrior-Tombigbee System. Each listing gives the craft's builder, year built, dimensions, engines and horsepower, present owner and address, and previous owner or owners, if any. A special section lists passenger vessels and certain private craft. No self-respecting riverman is likely to be without a recent copy of "The Boat Book" in easy reach. "You can't tell the players without a score card"—and you can't tell the boats without this invaluable volume.

Pearce, John Ed, and Richard Nugent. *The Ohio River.* 1989. Lexington: University Press of Kentucky. Writer Pearce and photographer Nugent took the trip so many river fans dream of—from Pittsburgh to Cairo, stopping along the way to soak up the local color. The result: a handsome, highly readable book.

Reid, Robert L., ed. *Always A River: The Ohio River and the American Experience.* 1991. Bloomington: Indiana University Press. A product of the "Always A River" collaboration, this collection of essays is uniformly interesting, but, for the purposes of this book, those by Michael Allen on riverboats and rivermen and Leland R. Johnson on engineering the river proved the most instructive of the lot.

Rice, Otis K. *Charleston and the Kanawha Valley.* 1981. Woodland Hills, California: Windsor. In telling Charleston's story, Rice provides colorful details of the Kanawha Valley's early salt industry and the early craft that carried that product to market.

Scott, Otto J. *The Exception: The Story of Ashland Oil and Refining Company.* 1968. New York: McGraw-Hill. This history of Ashland Oil includes valuable details on the company's longtime involvement with the river.

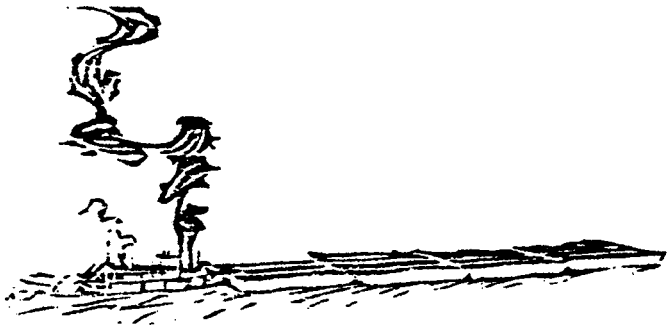
Sutphin, Gerald W., and Richard A. Andre. *Sternwheelers on the Great Kanawha River.* 1991. Charleston, West Virginia: Pictorial Histories. An encyclopedic—and lavishly illustrated—volume on the subject that's certain to make the reader long for a companion volume on the sternwheelers of the Ohio.

Twain, Mark. *Life on the Mississippi.* 1883. New York: Harper. No one has left us a better account of the steamboat era.

Vekick, Stephen Joseph. "W.P. Snyder Jr. Information Booklet." 1991. Privately printed. Sold in the gift shop of the Ohio River Museum in Marietta, this

twenty-four-page guide offers a wealth of information on the vintage steamboat moored there.

Waterways Journal. Published since 1887, this weekly newspaper is required reading for all rivermen. As a novice to the river, I have learned much from its pages.



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